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THE TREATMENT OF LOBAR PNEUMONIA.*

BY LORD DAWSON OF PENN, P.C., G.C.V.O., M.D., F.R.C.P. LOND.,
EXTRA PHYSICIAN TO THE LONDON HOSPITAL.

THE treatment of lobar pneumonia has produced for centuries concern and controversy which were justified by the prevalence and high mortality of the disease and still more by the way in which it would attack the healthy and robust on almost equal terms with the unhealthy and frail. About 70 years ago Wilson Fox, in "Reynolds's System of Medicine," wrote: "There is perhaps no subject in modern medicine which has been more earnestly discussed of late than the treatment of pneumonia. It has been the *champ de bataille* between the advocates on the one side of 'heroic' measures and the supporters of a 'rational' or 'expectant' treatment on the other."

The importance of this subject is brought home to us when it is recalled that 1 out of every 1300 of the population succumbs to the disease each year. The way in which it descends with tragic suddenness on men still on the rising tide of their usefulness and with the responsibilities of work and family on their shoulders, and in a few brief days destroys them, justifies Osler's designation of pneumonia as the "Captain of the men of death." On the other hand let it be admitted, in passing, that when life's work is done, pneumonia can be a merciful deliverer which saves the aged from the burdens of decrepitude and decay. But it is the former aspect which causes us concern because pneumonia makes heavy toll, not only on quantity, but quality of life.

Is it not true that the attitude of mind towards the treatment of pneumonia became changed from the time when it was established to be an infection by the pneumococcus, usually localised in lung and pleura. It is only necessary to recall cases within every doctor's experience which are doomed from the moment of invasion and crushed in 48 to 60 hours, or again epidemics of pneumonia, to realise that the study of the infection and man's resistance to its invasion are pre-eminent problems the elucidation of which would promote the prevention and cure of the disease.

One Sunday morning before the war I was called to an Eastern county. On reaching the house I found the husband dead, the wife with the rattle in her throat, and two children engaged in a race towards death—all from pneumonia. I realised better what the plague must have meant.

Think of diphtheria. Not so many years ago its ravages and its varied "cures" were the subjects of discussion, whereas to-day it is its specific therapy which mainly engages our attention. That in the case of pneumonia is the direction to look, and recent work justifies the hope that we can do so with increasing chances of success.

Specific Therapeutics.

The development of serum therapy followed the classification by Cole of pneumococci into four biological groups. Of these Nos. 1, 2, and 3 represent specific types, while No. 4 is a motley collection of many serological strains.

The serum contains protective substances similar to those which the patient's body is trying to produce and does produce in large numbers, according to Dochez, at the time of crisis, if the prognosis is favourable. The protective substances would appear to be antibacterial rather than antitoxic, since no toxin can be demonstrated as originating from the activities of the pneumococcus. The efficacy of the serum is commonly tested by its ability to protect mice from death when injected simultaneously with otherwise lethal doses of pneumococci.

The relative frequency of the different types and the severity of each vary in the same place at different times. There seems to be agreement that Group III. shows the smallest numbers and the greatest severity. Groups I. and II. together contain more than half the total number of cases—sometimes reaching 75 per cent.—and against them both there are effective antisera—notably against Group I.

The administration of these specific sera presented disadvantages which have retarded their general use. There was inevitable delay in typing the infection; for sputum is often absent in the early stages, culture of the blood not only consumes time but may be negative, and lung puncture again involves delay. Again the bulk of each intravenous injection was considerable, 100 c.cm. or more, and it had to be injected every eight hours for several doses. These objections were removed by the introduction of Felton's serum which is polyvalent (Groups I. and II.) and refined and so concentrated that a dose need not exceed 5 c.cm. for each 10,000 units. Moreover this serum is less liable to be followed by anaphylactic reactions.

Serum therapy has thus received renewed interest and trial. Since over half the cases are usually included in Groups I. and II., and Felton's serum is operative against both these groups, its administration can be commenced early and without waiting for the typing of the strain. Should the latter turn out to belong to either III. or IV. no harm though no good will have been done.

Before giving the serum the patient should be tested for hypersensitiveness (*a*) by dropping 2 drops undiluted serum into the eye. Within a quarter of an hour the conjunctiva will be injected if the patient is sensitive. (*b*) A more sensitive intradermal test with 10 per cent. of serum in normal saline gives a positive reaction in a susceptible patient. The hypodermic use of epinephrine affords protection in the event of anaphylactic reaction appearing.

The results of the use of Felton's serum are encouraging though not yet conclusive. Cecil found at the Bellevue Hospital that the mortality of Type 1 was reduced by over 30 per cent. and of Type 2 by 24 per cent. through the use of the serum in a total of 441 cases against a similar number of controls. Two recently published reports on the use and effects of this serum emanating from the Royal Infirmaries of Glasgow and Edinburgh are notable on account of their thoroughness and balanced judgments. Though both reports state that the numbers of their cases (Glasgow 57—Edinburgh 89) were too small for definite conclusions to be reached, favourable impressions were formed as to the worth of the serum.

There are grounds for thinking that, besides cutting down the mortality, in Types 1 and 2 the prompt use of Felton's serum cuts short the attack. Every

* Opening address at a meeting of the Medical Society of London on March 9th.

clinician must often have said to himself, "If only this visitation could be shortened, even by one day!" And now we find that the average day of the crisis of the disease is brought nearer, to the sixth day, by the use of Felton's serum, in Type 1—a very considerable gain. And in Edinburgh they had a distinct impression that the severity of the disease, the rough-and-tumble of it, was less. I suggest that the time has come for a wider trial of Felton's serum, used promptly as soon as pneumonia is diagnosed, without waiting for the typing of the strain.

Vaccine Therapy.—The use of vaccines has been given ample trial and received support by many workers, and my colleague Prof. W. H. Wynn proposes to deal with this aspect of the question. Perhaps I may give a personal experience. A patient badly stricken with pneumonia died ultimately of pneumococcic septicæmia. A vaccine prepared from his blood culture gave striking benefit in the treatment of many cases of pneumonia and when the vaccine was exhausted, I never met its like again.

The problems which face us in the treatment of pneumonia outside the acquirement of immunity are as follows.

Anoxæmia.

Blueness of lips and nails is an indication of oxygen-want. It may be a prominent and early feature.

The blocking of areas of alveoli with exudate must cut down oxygen intake and the output of CO_2 and its accompanying waste products. But this surely cannot be the entire explanation, for some very marked cyanosis is to be seen in severe cases of pneumonia and both early and ominously, before any consolidation has occurred, and indeed the patient will die and no large areas of consolidation will be apparent post mortem. This leads one to suggest that the cyanosis is in part due to such a damage of the alveolar endothelium by the pneumococci as to deteriorate its functional efficiency. In this way anoxæmia is linked with toxæmia, which clinically we know to be the case.

The "gassing" in the war first provoked the study of this question. Barcroft, Haldane, and others demonstrated by experiments with closed chambers the effects of varying degrees of oxygen deprivation. These effects were cyanosis, dyspnœa, raised pulse-rate, nausea, vomiting, and finally collapse, and resembled the symptoms of mountain sickness. By the analysis of arterial blood drawn by puncture, it was shown that in cases of pneumonia there was oxygen-want and sometimes to that same degree which in the experimental chambers would produce the above symptoms. Further, it was shown that the effective inhalation of 40 to 60 per cent. oxygen would raise the saturation of the latter in the arterial blood to nearly the normal point and alleviate the symptoms of anoxæmia.

The close association between the anoxæmia and the toxæmia explains why the alleviation of symptoms by oxygen therapy is sometimes partial and transient. In fact oxygen administration is a supportive rather than a curative measure, and its effect is well summed up by Barach after analysing the combined results of several observers as "beneficial to many and perhaps live-saving to a limited number." It may produce a marked improvement in the appearance and comfort of the patient, diminution of pulse- and respiration-rates, and less restlessness.

As to methods they must, to be efficient, secure an adequate oxygen saturation of the blood; they must also be practicable and not distressful to the patient.

Various types of small oxygen wards have been designed and permit of good nursing. The richness in oxygen of the inspired air is regulated and a concentration up to 40 or 50 per cent. is adequate. It is not necessary to dwell on means which concern ventilation, temperature, and humidity.

Portable oxygen tents are being employed and by this means the patient can be supplied with air having a saturation of 40 to 50 per cent. of oxygen, and with means to secure the right temperature and humidity. The fitting of windows to these portable tents prevents the patient from feeling encompassed.

For routine treatment the nasal catheter (No. 10) is the best—adaptable under all conditions of hospital and home. By using calibrated-reducing valves the amount of oxygen delivered can be determined and regulated. If two litres per minute are delivered through the catheter the inspired air contains 30 per cent. of oxygen and the latter can be raised to 35 per cent. Masks for oxygen administration are impracticable because they distress the patient. The use of the funnel and tube does not give inspired air a higher oxygen value than 22 per cent. and is of little use—just an imposing ritual. Before leaving the consideration of oxygen therapy a word may be said on the inhalation of oxygen mixed with 5 per cent. CO_2. When the abdomen is distended and the bases of the lungs are apt to lose functional efficiency, the latter can be improved by a brief inhalation of this mixture.

All would agree that elimination should be promoted and it is interesting to note that liquor ammon. acetatis and potassic citrate, long established by experience, are being justified by the exacter knowledge of pharmacology.

Cardiac Tonics and Other Aids.

Watching the blood pressure is a helpful guide. If it falls, and especially the diastolic pressure, strychnine is valuable. As regards digitalis, I will ask this—do we in practice find that digitalis often helps the circulation in these infections? Is not its action wonderful within its sphere, but is that sphere much beyond cardiac insufficiency and auricular fibrillation.

The remaining headings of treatment which call for comment have the essential purpose of "helping the patient to bear it." There is nothing more important than alleviating strain—distress and pain. How often has a pneumonia victim been knocked to pieces by distress and want of repose! How often has a patient owed his life to the good luck of cough being absent! That is why opium—its alkaloids and allies—are beyond price. How right were the Easterns when they stamped their opium cakes with an exclamation of thanks to Allah.

Some patients who are fully conscious, besides being in bodily pain and distress, suffer anguish from thoughts of endangered employment, of families left unprovided for. If we can lighten that load, think of the gain. Sometimes by the use of alcohol, at other times by hypnotics, at other times by one of the morphia family, ease can be secured. The right selection is something well worth the learning.

The hesitancy to use morphia (and I use this word conveniently to include heroin, codeine, nepenthe, &c.) in pneumonia is fortunately passing, though in some quarters it still lingers. For pain and damping down ineffective cough it is essential. The cough which derives itself from a pneumonic area can do no good; that area is out of business anyhow and should be kept at rest. The fear that morphia in medicinal doses will depress the respiratory centre is a bogy.

On the other hand, the muscles of respiration become exhausted by their constant use in coughing. The only condition under which morphia may require to be withheld or used with great restraint is in a generalised bronchitis with an exudate blocking the tubes.

Hypnotics I will desist from mentioning by name. Where a patient is just restless and sleepless all will agree the hypnotic is better than morphia—very often a combination is good—just enough say of nepenthe to reduce cough and the hypnotic secures a good sleep. I think we are apt to forget that in acute infection chloral and bromide still hold an important place.

Alcohol has the advantage of being a food which requires no digestion. It lightens worries and helps repose and sleep. Its quality matters greatly. It is seldom wise to press it on those who dislike taking it. But, with alcoholics remember that "he that hath, to him shall be given."

REFERENCES.

Cecil, R. L.: George Blumer Edition of Billings-Forchheimer's Therapeusis of Internal Diseases, 1929, p. 205.
Cowan, J., Cruickshank, R., Cuthbertson, D. P., Fleming, J., Harrington, A. W.: THE LANCET, 1930, ii., 1387.
Physicians of the Royal Infirmary of Edinburgh: Ibid., p. 1390.
Cecil: Text-book of Medicine, Philadelphia, 1930, p. 15.
Barach, A. L.: Arch. Int. Med., 1926, xxxvii., 186.
Henderson, Y., et al: Ibid., 1930, xlv., 72.
Cecil: New Eng. Jour. Med., 1928, cxcix., 415; see THE LANCET, 1928, ii., 766.
Felton, L. D.: Jour. Amer. Med. Assoc., 1930, xciv., 1893.
Cole, R.: Ibid., 1929, xciii., 741.
Haldane, J. S., et al: Jour. Physiol., 1919, lii., 402.

SAFER COLON SURGERY.

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IN the interests of patients it would be better if it were more generally recognised that the results of end-to-end or side-to-side anastomosis of the colon are uncertain, treacherous, and serious because, in the surgery of the colon, it is impossible to attain Listerian ideals. The truth apparently is, that no matter what kind of anastomosis or how perfect the surgeon's technique, consistent results, as in the mechanically similar operations of partial gastrectomy or enterectomy, cannot be expected. This is due to the fact that there is an entirely different set of circumstances present: the colon has a poor blood-supply, the vessels being sparse, weak-walled, and easily compressed by sutures; the bowel content is highly septic and infection is very likely to spread along the sutures to the peritoneum, even if these do not penetrate the mucous membrane.

Reliable statistics of the mortality after partial colectomy by the usual methods are difficult to obtain. From inquiries I know that the results of the surgeon of average ability are not good, and are not as a rule published; even the published results show death-rates of 25·9 and 14·3 per cent.,[1] 35 per cent.,[2] and 23 per cent.[3] My own experience has been disquieting notwithstanding extreme care in technique, combined with some form of proximal fistula. I have lost patients who were good risks, and even among those who recovered there were some anxious convalescences.

The primary cause of post-operative complications was always infection, which gave rise either to a mild local peritonitis with mild obstruction and occasionally a fistula; or to a spreading peritonitis which wrecked the anastomosis and resulted in the death of the patient. This infection was not always caused by peritoneal soiling at the time of the operation; from its time incidence and insidious onset it was obvious that it was an infection through the anastomosis, probably through the suture material in the thin colon wall or through devitalised tissue in the anastomotic edges. The operative mortality of ileocolectomy is not so great as that of partial colectomy because the region is perhaps not so septic; nevertheless the operation because of its colonic nature cannot be depended upon, especially in the debilitated, to give consistent results free from anxiety.

In an article published 25 years ago Paul,[2] of Liverpool, described his operation and described his results.[4] Out of 18 patients operated on for carcinoma of the colon, 17 lived; the one patient who died was not operated on by his method. Paul admitted that his operation was not a pleasant one for the patient and that the cure was long delayed. Notwithstanding these remarkably successful results this operation did not become popular with surgeons because it entailed fæcal fistula with its unpleasant aura, its uncertain closure, and its secondary operations; but as time has gradually demonstrated the dangers of the sutured colon anastomosis, and as patients have lost dislike to an artificial anus, now better controlled, surgeons have more and more employed operations embodying the principles of Paul.

Paul's Operation Modified.

Five years ago, with a view to minimising, perhaps avoiding, the objectionable side of Paul's operation, I devised a modification.[5] This modification had for its objective the early closure of the fæcal fistula and the avoidance of set "secondary operations" in order to make the operation, for practical purposes, a one-stage procedure. My results were good. Out of 12 very debilitated patients only one died and she was a most unjustifiable risk, being almost moribund before the operation.[5] The strain on the patients was very little both morally and physically, for it was possible to close the fistula very early in the convalescence while the patient was in bed and at no time to have much fæcal discharge on the dressings.

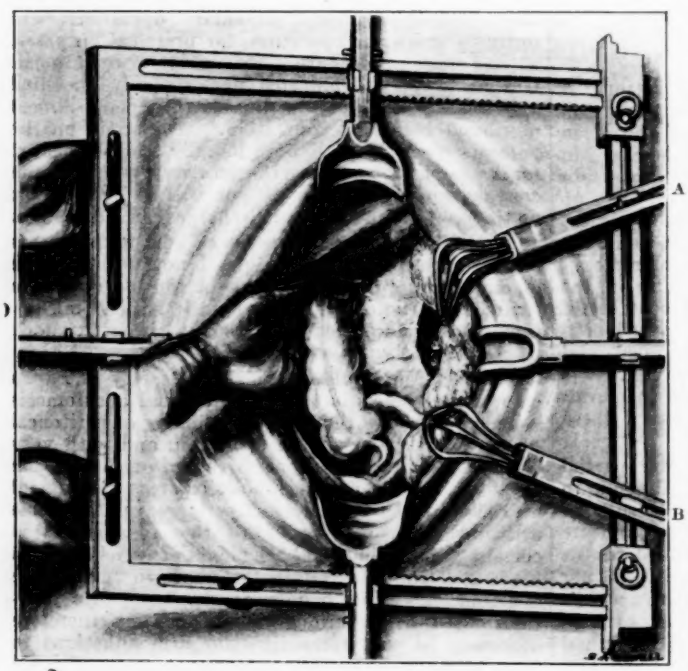
In the light of this experience and with further improvements in my technique I now feel justified in employing this procedure as a routine operation for colon resection, except where it is anatomically impossible, and latterly its use has been extended more frequently to ileocolectomy.

The main principle on which the safety of Paul's operation depends is that an intestinal anastomosis is accomplished without any possibility of peritoneal soiling at the time of the operation, and with very little probability of post-operative peritoneal infection because there are no stitch-holes or areas of doubtful nutrition; the unnecessarily large, unavoidable artificial anus, contiguous to the anastomosis is certainly an additional element of safety. Paul used a straight-edged enterotome to make the anastomosis. This made narrow anastomotic junctions with a precarious union. It was therefore necessary to wait some time for firm adhesions to form between the intestinal segments before it could be applied. My endeavour has been to make an early but a safe anastomosis by using an enterotome designed to make its own adhesions, and anastomotic junctions which would be broad and safe. Then

having obtained this, the second objective has been to avoid the unnecessarily large artificial anus, comprising the open ends of both segments of bowel; and to create instead a fistula only large enough to subserve the required function, that is, an opening which would function only for a short time like a cæcostomy. Having attained these two essentials I planned to close this now manageable fistula at the end of the first ten days after its purpose had been fulfilled by a piece-meal method of repair, which could be carried out in the patient's bed as part of the daily dressing. The early anastomosis was made by applying in the first 24 hours an enterotome with very generously bevelled edges, and a narrow almost cutting face (Fig. 3, c), the bevelled edges enabling a wide and graduated pressure to be applied and producing the broad anastomotic junctions. In from 36 to 48 hours, by extra pressure, the narrow cutting face of the clamp is brought into play, the gangrenous tissue cut through, and the lumens of the adjacent bowel connected in from three to four days.

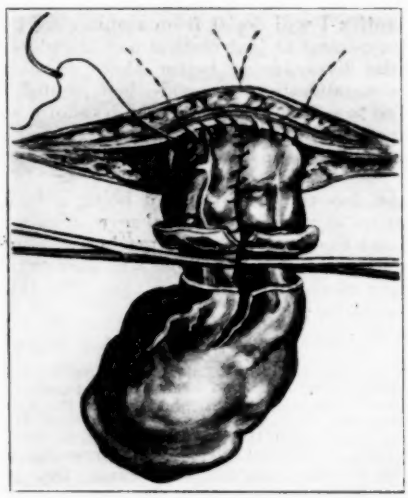
The art of controlling the size of the fistula depends, firstly, on leaving outside the abdominal wall, when the diseased segment is being amputated, enough of the ends of the intestinal segments to permit a closure; and secondly, on getting rid of the redundancy by suturing the whole of the non-functioning end of the distal segment and part of the end of the proximal segment in the first 48 hours before the chronic inflammation, which is part of the process of natural healing, makes the intestinal wall too rigid to suture. In this way immediate and certain union is obtained and a small manageable fistula, like a cæcostomy, is left. After eight or ten days this fistula can be closed on the following principles: the gut is painless, so it is sutured, without the administration of an anæsthetic, in the patient's bed as part of the daily dressing; the bowel is sutured early—that is, the moment that the fistula ceases to be of service—while the intestinal wall is still somewhat flexible; eversion or prolapse of the mucous membrane interferes with, or even prevents, the healing of intestinal wounds, so the mucous membrane is freely amputated. A clear appreciation of this latter principle is necessary when dealing with wounds of hollow viscera. In hollow organs, the circular and longitudinal muscle are always in a state of plastic tone in order that the organ may keep up a peristole, a contraction round the contents of the organ. The mucous membrane is redundant, uncontractile, and loosely attached to the muscle layer; this is necessary so that it can adapt itself to the different degrees of distension and contraction of the organ. When a wound is made in an organ and the muscle-fibres divided, they retract, and the mucous membrane must then evert or even prolapse. The prolapse necessarily must be greater where the wound is big or the muscle is pathologically hypertrophied; I have seen a very hypertrophied stomach, when a large opening was made in it, turn completely inside out. This eversion or prolapse opposes the mucous membrane surfaces; this delays the natural healing of small intestinal wounds, and makes practically impossible that of large wounds. The management of the mucous membrane is therefore very important. It is, I think, a lack of the appreciation

FIG. 1.



Retractor locked in wound and firmly clamping on protective towels. Mechanical hands (A B) incarcerate the small intestine, covered with gauze veils. With two hands the assistant lifts the side of the retractor and so lifts the abdominal wall away from the ascending colon. This exposes to view the peritoneum lateral to the colon, which is incised. The colon stripped up by the surgeon's left hand is brought to the mid-line.

FIG. 2.



Segments of bowel are sutured together and to the parietal peritoneum, and the sero-muscular layer is turned back. The clamps are applied to the mucous membrane.

of the importance of this principle which has led to the failures and multiple operations in vesicovaginal fistula.

The practical application of this principle in the closing of the residual fistula is as follows: (1) much more mucous membrane than muscle coat is cut away, when the diseased segment of bowel is amputated; (2) the size of the opening is limited as early as possible, by partial suture of the cut ends, in order to prevent ectropion of the mucous membrane; (3) the mucous membrane is extensively dissected from the muscle coat and amputated before each secondary suturing.

PARTIAL COLECTOMY.

The actual steps of partial colectomy, as I now perform it, are as follows:—

(1) A paramedian incision is made in the lower part of the abdomen.

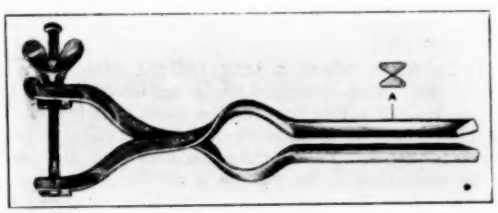
(2) Protective towels made of rubber covered with gauze are placed over the edges of the wound, well on to the peritoneum of the anterior abdominal wall. These are firmly clamped on by a special four-bladed retractor.[6] This retractor is locked firmly into the abdominal wound and gives the operator control of the abdominal wall, enabling him to lift it away from the viscera, create an actual body-cavity out of a potential one, and expose and incise under sight the peritoneum lateral to either the right or left colon. This retractor enables a growth in any part of the colon to be dealt with easily from a mid-line incision (Fig. 1).

(3) With the gloved hand the diseased segment of bowel, with its mesenteric attachment, is stripped up from the posterior abdominal wall and brought to the mid-line.

(4) The mesentery is divided and ligated; this allows further evisceration of the bowel.

(5) By experiment the abdominal region is found in which the mobilised loop will allow the most

FIG. 3, C.



Enterotome with bevelled edges. (Allen and Hanbury.) Cross section at A.

efficient resection of the lesion; if necessary a counter opening is made through which the loop will eventually be brought.

(6) The segments of bowel lying adjacent to each other which are to form the anastomosis are sutured together (Fig. 2).

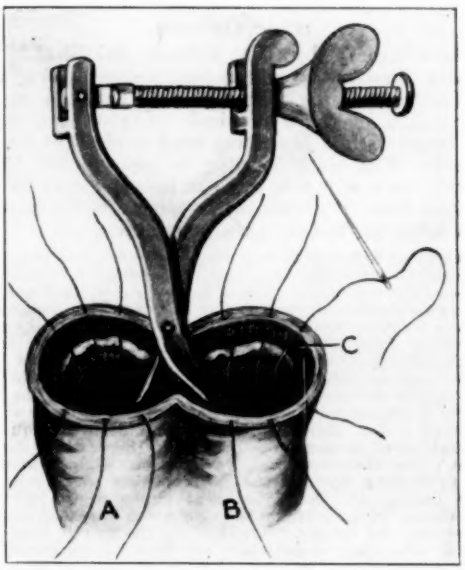
(7) Any deperitonealised areas on the posterior abdominal wall are covered.

(8) The abdominal wound is closed; the protruding bowel is pinched a little in the closing, in order to direct the intestinal contents through the anastomosis when it will be formed; this minimises the amount of fæces on the dressings.

(8) The diseased segment may be removed at once or in 24 hours. There is very little disadvantage in removing it at once, for the peritoneal cavity has been carefully closed. In removing this segment the seromuscular layer is turned down as a cuff, the mucous membrane drawn out, and clamped as proximally as possible.

(9) In less than 24 hours the clamps are removed,

FIG. 3.



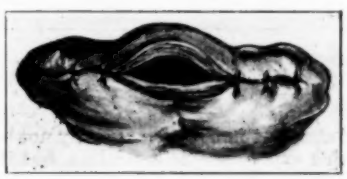
A = distal segment. B = proximal segment. Sutures introduced ready to be tied. C = area inside bowel denuded of mucous membrane.

the spur-clamp applied (Fig. 3, C), and the ends of the bowel so sutured that the fistula will be only large enough to subserve the necessary function (Fig. 3, D).

(10) The pressure on the spur-clamp is gradually increased till finally, in from three to four days, the lumens are united.

Six or seven days are now allowed to elapse so as to allow firm union of the anastomotic junctions. After this the artificial anus is no longer required and an attempt is made to close it. A few atraumatic needles with No. 1 catgut, gloves, a very sharp chisel-edged dissecting scissors, and other necessary instruments are left in a sterile tray beside the patient's bed. At a routine inspection of the wound the mucous membrane is dissected from the muscle coat with the scissors and amputated. The opening is then closed with interrupted sutures. Three or four days later one or two of these sutures will be found to have cut out. It will then be necessary to repeat the resection and suture.

FIG. 3, D.



Ends of bowel after removal of enterotome.

Towards the end of the fourth week, from the suturing and shrinking associated with natural healing, most of the redundancy of the bowel will be found to have disappeared and the fistula will be closed or there will be a small opening emitting only air. The patient can now be allowed up. In two or three weeks, when most of the inflammatory

infiltration of the wound has disappeared, under novocain anæsthesia the bowel stump is dissected out, a few sutures put in any small fistula that may be present, and the whole dropped beneath the muscles; these are very loosely approximated with a few silkworm gut sutures (Fig. 5).

ILEOCOLECTOMY.

Ileocolectomy by the method published [5] had certain disadvantages; the ileal contents being fluid and more irritating than those of the colon caused excoriation of the abdominal wall; the continual discharge of fluid fæces was very unpleasant for the patient. But since learning to manage the fistula better, one is able now to do an ileocolectomy by this method with very little inconvenience to the patient. The following history exemplifies this:

A patient suffering from a large ileocæcal carcinoma was emaciated and anæmic. Notwithstanding all kinds of preparatory treatment, she was a very bad surgical risk and I am sure she would have died if she had been operated on by the ordinary methods. In this particular instance, the departure from the usual technique was: the intra-abdominal suture uniting the intestinal segments was made longer and a longer spur-clamp was used; the whole of the end of the colon and a good part of the ileum were closed immediately the loop of diseased intestine was removed; the blades of the enterotome were squeezed through small separate openings near the ends of the cut bowel; the abdominal wall was made to slightly constrict the protruding bowel; the ileal opening was made just large enough for the liquid ileal discharge to function; in 36 hours the pressure on the clamp was increased in order to connect the lumens (Fig. 5). On the fourth day, after a weak aperient, the patient's bowels acted naturally. At no time was there any fæces on the dressings, although the ileal fistula was open and plenty of gas escaped. No difficulty was experienced in closing the residual fistula in the usual way.

FIG. 4.

Extra-abdominal part dissected free and dropped back with closure of abdominal parietes.

This case has demonstrated to us that it is possible to make an ileocolectomy after the principle of Paul and to get no fæcal loss; much in the same way as many cæcostomies, in the absence of obstruction, discharge flatus but not fæces. It may not be possible to repeat this experience as a routine, but it certainly demonstrates a principle, which should be exploited.

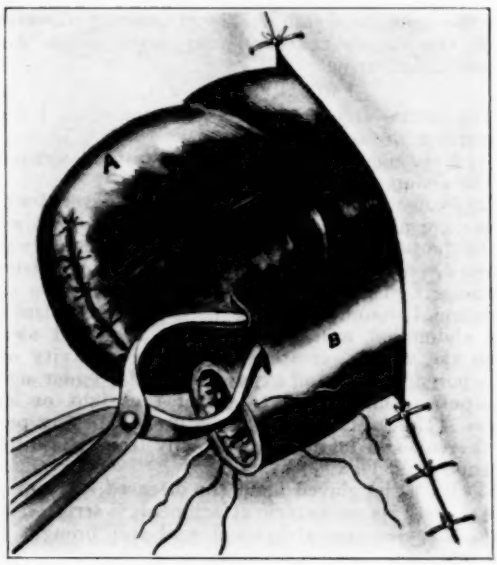
Application and Results.

The method has its special application in two classes of patients:—

(1) In the type of patient who has advanced operable carcinoma with no secondaries; who is so extremely devitalised that intestinal union is unlikely and who would not survive much operative interference. Such an instance is the following:

A man, aged 54, suffering from a very large ileocæcal carcinoma was so emaciated and enfeebled that we did not even entertain the thought of exploring the abdomen. The anæsthetist gave as his opinion that he would probably not tolerate an anæsthetic for exploration. To our surprise, at the exploration, we found that the growth was operable. Ten minutes sufficed to strip up the diseased segment of colon from the posterior abdominal wall and fix it as a loop through the loosely sutured abdominal wound. The remainder of the operation—the plastic side of it—was done in the patient's bed without even local anæsthesia. This man left the hospital in seven weeks with a completely healed wound. He is now, five years later, the captain of his bowling club.

FIG. 5.



Ileocolectomy: A = protruding end of transverse colon closed with sutures. B = end of ileum partially closed. The blades of the clamp are shown inserted into two small openings made near the ends of the bowel. Subsequent experience has shown that this is not an advantage.

(2) In cases where a long tedious dissection for freeing an extensive growth is necessary, and the patient cannot safely survive the extra time which the aseptic technique of an intra-abdominal colon anastomosis requires. The method allows the incidence of the operation to be put on a careful dissection of the growth. The following exemplifies this aspect:

Twelve months previously a patient had been operated on for a carcinoma of the hepatic flexure of the colon which was then considered inoperable. As the patient had remained in fair health I was subsequently asked to make a special attempt to remove it, and spent two hours on a very extensive careful dissection. Time, of course, was necessary, and that was all required for the dissection; no time could be spared for an anastomosis. Therefore, after the diseased segment was removed, the ends of the bowel were left in the way described. The operation was subsequently completed in bed.

That there is no great danger in making an early anastomosis in the way that we have indicated is proved by the successful cases to which I have referred. In addition to these, Mr. E. T. C. Milligan, of London,[7] informs me that he has operated successfully on ten patients by this method and he makes the remark that in contrast to the usual methods of resection and anastomosis, there is an absence of anxiety and but very little strain on the patient. In his last patient the bowels acted naturally on the fourth day after removal of a carcinoma of the sigmoid colon. In another the fistula and abdominal

wound were healed in three weeks. The operation has been performed successfully on patients with distended large gut. When we compare the almost symptomless convalescences and negligible mortality of very debilitated patients operated on by this method, with the stormy convalescences and unnegligible mortality of the sthenic group of patients operated on by the ordinary methods, we are forced to two conclusions: first, that many of the patients in the sthenic group would have been alive if they had been operated on by this method; secondly, that even if it is still open to debate whether this method or one based on similar principles should be the routine operation of a first-class surgeon, there appears to be no doubt that this method should be the operation of choice for a surgeon of average ability.

CONCLUSION.

Partial colectomy after Paul is much the safest method, but it is encumbered with penalties to the patient. The methods here advocated, although exacting on the time and ingenuity of the surgeon, enable him to close the fistula very early and almost to put it on a basis equivalent to a cæcostomy. This abolishes the disabilities to the patient and places the operation on the same plane of safety as gastric or small-intestinal operations, extends its use to ileocolectomy, and brings it within the realm of a routine operation for resection of the colon.

REFERENCES.

1. Turner, G. Grey: THE LANCET, 1929, i., 1017.
2. Miller, R. T.: Ann. of Surg., 1923, lxxviii., 209.
3. Lockhart-Mummery, J.: Diseases of Rectum and Colon, London, p. 776.
4. Paul, T.: Brit. Med. Jour., 1895, i., 1139.
5. Devine, H. B.: Jour. Coll. Surg. Austral., 1928, i., 173.
6. ,, ,, : Surg., Gyn., and Obst., 1930, i., 455.
7. Milligan, E. T. C.: Personal communication.

THE USE OF CONTACT GLASSES.

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IN a recent paper in THE LANCET (1930, ii., 1067) Mr. A. Rugg-Gunn discusses the use of contact glasses, but there are several points on which I do not agree with him. He does not make it clear whether his statements are derived from his own experience or from the literature. I presume that he has only one set of contact glasses, for he only speaks of one, but in my opinion the minimum for uni-ocular examination is a set of 5–11 mm., each varying from the other by about 1 mm. Naturally this set will not meet every case, and the glasses are therefore whetted to give a plus or minus effect. From this set it is not desirable to attempt to produce a correction of more than four dioptres, since the modification necessary in the glass supplied sometimes makes it so different from the trial glass that it cannot be worn. For high corrections, therefore, it is better to work with a second set in which the radius varies by 0·5 mm. With this set the subsequent correction on the trial glass need only be 1 or 2 dioptres. Best of all, however, is to have a set of glasses progressing by 0·25 mm.—e.g., 5·0, 5·25, 5·5, 5·75, 6, and so on up to 11. This would almost abolish secondary corrections and would make the glass supplied almost the same as the trial glass.

Moreover, the scleral radius—i.e., the radius of the contact ring—is not sufficiently varied in a series running 11, 12, and 13 mm. It is sometimes possible to see that a glass with a radius of 11 mm. is too tight, while one of 12 mm. admits air because it is too flat. In a case like this, glasses with a contact radius of 11·5, 12·5 mm. are needed. Since most people need binocular vision, the set of glasses should be in duplicate, for the patient cannot decide from a uni-ocular examination whether or not he can wear the glasses. This makes the apparatus somewhat complicated, but the greater the choice of glass the fewer the number of failures.

It is of considerable value for the patients to be given, immediately after the examination, the identical glass which they selected; this has psychological value, as patients are often unable to get the glass in and out when it comes to them from the makers after a few days, even though it is, in fact, a perfect fit.

The apparatus becomes even more complicated when the ordinary contact glasses are combined with a brown tint to protect the eye from snow glare. This should cover the optical part and have a diameter of 10–12 mm. and a light-absorption value of 25, 50, or even 75 per cent. Sportsmen appreciate this very much, but it has also a cosmetic value for which many patients are thankful.

Adjusting the Glass.

In removing the glass the physician must not use an ivory spatula or even a finger-nail, as the thin edge—only 0·3 mm.—is easily injured. The glass must be put in and out with a small rubber sucker. Sometimes when the patient has worn the glass for several hours it adheres very firmly and is difficult to remove. The sucker must then be pressed down firmly on the middle of the cornea so as to drive out as much air as possible, and the patient then moves his eye from left to right. Physiological saline (Ringer's solution) is better than sugar solution.

If all these points are remembered, failures are very rare. There will always be some people whose eyes are so shaped that a spherical glass cannot adhere to them, and there will always be sensitive patients who cannot get accustomed to wearing this uncomfortable fitting on the most delicate surface in the body.

All the writers on contact glasses in the past have used a fixed scleral radius of 12 mm., and that is the reason why experiments on this form of correction—which have been made for the last 100 years—have hitherto all failed. It is not the optics of the method that constitute the difficulty, but the application of the glass to the cornea, which demands not only correct scleral radius but also a good relation to the optical dimensions. A glass that is relatively flat compared with the natural curve of the cornea must lie very lightly on the middle of the cornea while a glass that is more highly curved than the natural cornea must touch it equally gently around its circumference. Therefore it is of the utmost importance to adapt the glass accurately to the sclera.

Indications for Contact Glasses.

Contact glasses are suitable for a number of conditions besides the various forms of ametropia.

It is now possible to manufacture a glass which is coloured brown in the middle for a diameter of 10 to 13 mm. and has a light absorption value of 25, 50, or 75 per cent. This is the best possible protection to the eye against climatic conditions such as storms, dust, cold, and heat. Children with ophthalmia like these glasses and do well with them. In my experience these lenses also constitute the best treatment

for colour-blindness and its photophobia, improving the vision and reducing the nystagmus.

The contact glass is also valuable for serpentine ulceration of the cornea, progressive abscesses, and other forms of keratitis, especially if the concavity of the glass is smeared with a disinfectant ointment. Other conditions for which it is useful include neuroparalytic keratitis, some forms of sclerotic keratitis, acne rosacea of the conjunctiva and cornea, spring catarrh, trachoma, pemphigus, xeroderma pigmentosa, hay-fever, kerato-iritis, dystrophia marginalis, and lagophthalmic keratitis. Cases of primary iritis also do well with contact glasses, and even tuberculous, syphilitic, rheumatic, diabetic, gouty, and infective cases are suitable.

There is no fear of causing glaucoma by the use of these glasses, although anxiety is sometimes aroused when the patient sees rainbow colours round an open light. This is due to misfit of the glass with the cornea, or the use of hard or distilled water, and can be obviated by appropriate fitting and the use of physiological saline. Patients who have had a plastic operation on the cornea should wear contact glasses to keep the implanted piece in position when the lids sweep over it.

Contact glasses are indicated for the treatment of squint, and one eye can be corrected by itself if desired. There are also occupational indications for this form of correction; architects, seamen, pilots, chemists, actors, and engineers should try it; so also should sportsmen such as ski-runners, bicyclists, swimmers, motorists, gymnasts, sailors, tennis players, and those who hunt.

Finally, there is the cosmetic indication; women who have pale grey or blue eyes can have them darkened to any desired degree by contact glasses.

Illustrative Cases.

CASE 1.—A man, aged 42, had lightning cataract with vision in the right eye of 6/8 with a + 14 lens and in the left eye of 6/6 with a + 16 lens. With a coloured contact glass 2/6 he obtained 6/6 vision.

CASE 2 was totally colour-blind and shunned the light, but with 50 per cent. coloured contact glasses 2/8 he could open his eyes in a bright light.

CASE 3.—A girl, aged 8, had 6/18 vision in both eyes with a − 8 lens in the right eye and a − 7 in the left. With a contact glass of 2/9·5 in the right eye and 2/10 in the left she obtained 6/8 vision. She has worn her glasses daily since October, 1929, taking them out at night, and could not now do without them.

CASE 4.—A seaman, aged 25, had a vision of 6/6 with a − 3 lens and lost his berth in consequence. With contact glasses he has normal vision and is fit for sea again.

CASE 5.—A gamekeeper, aged 29, had a vision of 6/60 in the right eye and 3/60 in his left eye. With contact glasses 2/8 in the right eye and 2/85 in the left eye he has 6/8 vision, and he wears the glasses daily without discomfort.

CASE 6.—An orchestral conductor, 56 years old, is presbyopic, but by the aid of contact glasses he obtains the necessary field of vision at a distance of 80 cm. which is necessary for his work. He cannot wear spectacles, but with contact glasses has already conducted ten important concerts.

CASE 7.—A girl of 16 has 6/60 vision in the left eye, improved by a − 2 spectacle lens to 6/36. She is astigmatic; the right eye is normal. Since December, 1929, she has worn a contact glass 3/86 on the left eye, which gives her 6/8 vision and makes her very comfortable. Her parents are delighted with her increased happiness and the abandonment of the ugly spectacles.

CASE 8.—A married woman, aged 35, a concert singer, suffers from myopia and astigmatism. She obtains 6/8 vision with a correction in the right eye of sphere − 3 and cylinder − 2, and in the left eye with a sphere − 6 and a cylinder − 2. With contact glasses 81 in the right and 86 in the left she gets the same or slightly better correction. At first she could hardly bear the glasses for an hour, but now she keeps them in as long as she wants to, and once she even fell asleep in them.

CASE 9.—A spinster, aged 20, has myopia with a little astigmatism. With spectacles (cylinder − 1, sphere − 6) she has 6/6 vision, which she also obtains with contact glasses of 9. At first she wore the glasses for an hour only, but after some days she became accustomed to them.

CASE 10.—A man of 30 has a normal right eye but the left has trachoma, pannus, and myopia, produced by keratoconus in the middle of the cornea. He can distinguish fingers at a distance of 2 ft. When he first wore a contact glass of 76 he felt very uncomfortable, and his eyelashes seemed to scratch the cornea. In time, however, the cornea grew clearer and in a few months he had a vision of 1/10 and was able to wear the glasses continuously for a fortnight.

It will, I think, be seen that contact glasses are likely to prove increasingly useful in ophthalmic work.

ANTIGENIC PROPERTIES OF DIPHTHERIA TOXOID-ANTITOXIN FLOCCULES.

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DURING the past few years several new forms of diphtheria prophylactic have been introduced. The object of workers in this field is to produce one which is safe, efficient, rapid in action, and free from non-specific poisonous materials, which—as is well known from the experience gained with the older forms of prophylactic—are apt to cause unpleasant local reactions, especially in adults. While many of the properties of diphtheria prophylactic can be studied and compared in laboratory animals, certain others, such as the liability to cause reactions on injection, can only be investigated in human beings, and the important question of the activity of prophylactics in producing rapid immunity must also eventually be investigated in human beings.

Through the courtesy of Dr. R. A. O'Brien, Director of the Wellcome Physiological Research Laboratories, I have had the opportunity, during the past two years, of studying the form of prophylactic known as "toxoid-antitoxin floccules" (T.A.F.) in a series of 87 nurses at the North-Western Fever Hospital. Attention has been specially directed toward the production of immunity as shown by the Schick reaction, the rate of production of the Schick-negative state and the degree of local and general reactions produced by the injections.

From the nature of their preparation, the floccules used would be expected to cause less reaction than the older forms of prophylactic. The preparation used in this work consists of a suspension in saline of the washed precipitate produced from mixtures of diphtheria toxoid and diphtheria antitoxin.

The first recorded observations on the antigenic activity of the precipitate produced by the interaction of diphtheria toxin and antitoxin were made by Park and his colleagues [1] in 1924. They showed that a "T.A. solution of precipitate from mixing toxin and antitoxin" immunised guinea-pigs. Sordelli and Serpa [2] in 1925 centrifuged the precipitate produced in an over-neutralised mixture of toxin and antitoxin and found that the precipitate and supernatant fluid had apparently equal immunising value. Hartley [3] investigated the antigenic properties of the washed precipitates produced in over-neutralised, neutral, and under-neutralised mixtures of toxin and antitoxin and showed that the immunising value

of the first was low, that the precipitate from neutral mixtures was non-toxic but of high immunising value, while the precipitate from under-neutralised mixtures, though toxic in relatively large doses, was a remarkably active antigen. Hartley showed that these washed precipitates contained less than 1 per cent. of the total nitrogen present in the mixtures from which they separate, and suggested that, working on these lines, a relatively pure antigen—free, at least, from the non-specific material frequently the cause of local reactions—becomes a possibility. Hartley's results were confirmed by Glenny, Pope, Waddington, and Wallace,[4] and Glenny and Pope [5] showed that the precipitates from mixtures of toxoid and antitoxin are as good antigens as those prepared from toxin and antitoxin.

The substitution of toxoid for toxin permits the preparation of floccules entirely devoid of all risk, and this form of diphtheria prophylactic—toxoid-antitoxin floccules—has been used in the present work. O'Brien [6] states that the preparation seems to be free from liability to cause local reactions in human beings and quotes a series of 56 subjects immunised by Okell and Parish, 45 of whom became Schick-negative when tested from one to five months later, after one, two, or three doses of toxoid-antitoxin floccules. Dudley [7] states that the toxoid-antitoxin floccule preparation introduced by Glenny and Pope in 1927 is a better immuniser than ordinary toxoid, and records that the painful local and constitutional reactions, observed by no means infrequently when the older forms of antigen are used, entirely disappear when these floccules are used as immunising antigens.

In Germany, toxin-antitoxin floccules prepared by Schmidt have been used to a considerable extent in recent years. Schmidt and Scholz [8] in 1925 reported that toxin-antitoxin floccules immunised rabbits, and from these results, and those obtained on man, expressed the view that toxin-antitoxin floccules constitute the best antigen yet available for the active immunisation of man. They state that the injection is painless, that the local reaction produced is trifling or absent altogether, and that the antigenic value is high. Eberhard,[9] using toxin-antitoxin floccule preparations supplied by Schmidt, reported promising results, and stated, inter alia, that a single injection suffices for the immunisation of human beings. Soldin [10] makes the same claim, but other workers in Germany, while in general agreement regarding the absence of local reaction following injection, advocate the use of more than one dose of prophylactic.

Method and Results of Investigation.

As a preliminary to commencing the use of toxoid-antitoxin floccules in ordinary immunising doses a small series of cases were first given one subcutaneous injection of 0·25 c.cm. Since the members of this small group remained entirely free from troublesome reaction, ordinary doses of 1 c.cm. were thereafter employed. All new nurses, numbering 211, were Schick-tested within a few days of taking up duty in the hospital. Reactions were read seven days later, when 87 proved to be positive and were at once given a dose of the prophylactic. The number of doses given and the intervals between consecutive inoculations varied at different periods of the work, but the majority (42) received three doses of 1 c.cm. each at intervals of a fortnight; eight received three doses at weekly intervals; four had two doses at fortnightly intervals, while one who was only weakly positive received one dose only and a fortnight later was found to be Schick-negative. Four of those who were still Schick-positive eight weeks or more after the commencement of immunisation received more than three doses, the intervals between doses varying from one to three weeks. Of these four, two had six doses, one five, and one four. Whenever possible a re-test was performed four weeks after the last inoculation—i.e., from six to eight weeks after the commencement of immunisation. Those proving still positive were re-tested at intervals of four weeks until they became Schick-negative.

Unfortunately, owing to various causes such as absence on leave, transfer to other institutions, illness or leaving the service, it was impossible to carry out this programme in all the 87 positive reactors. Thus 19 were not re-tested after their course of immunisation. Of the remaining 68, 64 eventually became negative and four left the hospital while still positive. In one of these immunisation was abandoned after the first inoculation owing to a severe reaction. Another, who was still positive ten weeks after the last of three inoculations, refused a second re-test. Of the remaining two, one, who was positive four weeks after the last of three fortnightly doses, received a further three doses and was still positive when she left hospital 29 weeks after the commencement of immunisation. The other was positive six weeks after the last of three weekly inoculations, received a further 1 c.cm., and was still positive five weeks later, when she was given a fifth dose. She was still positive five weeks and 14 weeks later—or 34 weeks after the commencement of immunisation—when she, also, left hospital.

In only two, therefore, of 86 nurses did a full-controlled course of inoculations certainly fail to convert the Schick reaction from positive to negative.

Table I. includes only those cases who received a single course of immunising injections and were then re-tested at intervals until immunity was established as shown by a negative Schick reaction. The particulars of the four subjects who received more than a single course of the prophylactic and finally became immune are as follows.

All four were first given a course of three inoculations; subsequent re-tests being positive, one was given one more dose and became negative 14 weeks from the commencement of immunisation; another had two extra doses and became negative in 20 weeks. The remaining two had a second course of three injections, becoming negative in 16 and 29 weeks respectively. Comparing these results with those shown in Table I., it does not appear that the extra doses of prophylactic have materially shortened the time required for immunisation.

Table I. gives some indication of the period required to establish immunity, but it must be remembered that, owing to the reasons already mentioned, some of the subjects were not re-tested at the scheduled times and therefore the actual time taken to immunise may have been less than that shown. For example, in the series which had three fortnightly inoculations, the one who was Schick-negative 25 weeks after the last dose only had the one re-test. Similar conditions obtained in several of the other long cases. An important fact brought out in this series is that, if three doses of 1 c.cm. each are given at intervals of a fortnight, one may expect nearly one-half of the cases to be immune four weeks later and 90 per cent. to be immune in nine weeks.

The small series who received only two inoculations were not specially selected cases, but were taken in rotation at the end of the investigation when an attempt was being made to discover if two doses were sufficient; results coming in since the Tables were compiled have not quite borne out the good impression that was based on the original small series.

The comparatively poor results shown in the series who had three doses at weekly intervals may be attributable to the fact that this series contained several long cases who were not re-tested early enough.

Precise details of the length of time elapsing between courses of immunisation and the proved establishment of immunity are scanty in the literature. Kelleher,[11] in his report of immunisation work in a series of 224 boys on the training ship *Exmouth*, found that the average time dating from the first immunising dose was 2·9 months. The antigen used by Kelleher was the older T.A.M., but the average age of his cases was probably five or six years below that of the hospital nurses.

TABLE I.—(*55 Cases*).

Inoculations— Number ..	1	2	3	3
Interval between ..	—	2 weeks.	1 week.	2 weeks.
Immunising time from final inoculations.	Number and percentage Schick-negative.			
Weeks.	%	%	%	%
2	1 (100)	1 (25)	—	—
3	—	—	—	1 (2·4)
4	—	1 (50)	1 (12·5)	19 (47·6)
5	—	1 (75)	—	6 (61·9)
6	—	—	1 (25)	3 (69)
7	—	—	—	1 (71·4)
8	—	1 (100)	—	2 (76·2)
9	—	—	1 (37·5)	6 (90·5)
13	—	—	—	1 (92·8)
15	—	—	—	1 (95·2)
19	—	—	1 (50)	—
20	—	—	2 (75)	—
21	—	—	1 (87·5)	—
25	—	—	1 (100)	1 (97·6)
28	—	—	—	1 (100)
Total cases..	1	4	8	42

REACTIONS ON INOCULATION.

This matter is of considerable importance both to the individual inoculated and to a hospital administration. I have, therefore, kept careful records of all reactions, and the results are shown in Table II.

TABLE II.

Local.		General.		Combined local and general.		Total.
Slight.	Mod.	Slight malaise	Mod. malaise with vomiting.	Slight local and slight general.	Slight local with mod. malaise and vomiting.	
12	1	5	2	2	3	25

The reactions were, generally speaking, either completely absent or very slight, although in one case in my series it was necessary to abandon immunisation on this account. The comparative absence of reactions is all the more striking when it is realised that all the subjects were of adult age, for it is well known that, whereas with the older prophylactics reactions were uncommon in children, the reverse was the rule in adults. A local reaction was classified as slight if there was no more than a little redness or tenderness at the site of inoculation. The one noted as moderate had redness and swelling, involving one-third of the upper arm and lasting about three days. In four of the five cases in which vomiting occurred, it was after the second injection. The one case in which immunisation was abandoned was 27 years of age and, as might have been expected, a combined pseudo and positive reactor. She showed marked redness, pain, and swelling of the upper arm, vesiculation around the site of inoculation, and considerable malaise after the first inoculation. No further dose was therefore given.

DIPHTHERIA DURING THE COURSE OF IMMUNISATION.

Four nurses developed undoubted faucial diphtheria before immunisation was complete and negative Schick reactions obtained.

CASE 1.—The onset was on the thirteenth day after her second inoculation—i.e., the day before the third dose was due. The Schick reaction was still positive 15 weeks after the onset of her attack, when she received a further 1 c.cm. of prophylactic. A second re-test four weeks later proved negative.

CASE 2.—The onset in this case was five weeks after the last of three fortnightly inoculations, when she was still Schick-positive. No further doses were given, but the Schick reaction was negative eight weeks later. She remained a nasal and faucial carrier for six weeks.

CASE 3.—This nurse received only two fortnightly doses of prophylactic and developed faucial diphtheria six weeks after the second. She became Schick-negative three weeks later.

CASE 4.—In this instance an attack of faucial diphtheria occurred 12 weeks after the last of four doses. The antitoxin content of the blood was then estimated and found to be less than 1/50 of a unit per c.cm.

None of these cases had any reaction, either local or general, after the injections, and the attack of diphtheria was mild and uncomplicated in every instance. The mildness of these cases helps to dispose of the negative phase bogy.

It must be borne in mind that these cases all occurred in newly joined nurses who had come from country districts where the natural immunity is low and that, once in the hospital, they were continuously liable to heavy doses of infection.

Conclusions.

The preparation of diphtheria toxoid-antitoxin floccules used in this work is an efficient and rapidly immunising antigen which definitely protects against diphtheria. Its use in adults is not commonly followed by unpleasant reactions and, with rare exceptions, in the few instances when these do occur they are of a trifling character. A preliminary small injection of the prophylactic is unnecessary, and the best results are obtained by giving a course of three inoculations of 1 c.cm. each with an interval of two weeks between doses.

I would like to acknowledge my indebtedness to Dr. R. A. O'Brien, of the Wellcome Research Laboratories, for his kindness in supplying the prophylactic; to Dr. P. Hartley, of the National Institute for Medical Research, for kind help in regard to the literature of the subject; and to Dr. A. Joe, medical superintendent of the North-Western Hospital, for valuable suggestions.

REFERENCES.

1. Park, W. H., Banzhaf, E. J., Zingher, A., and Schoder, M. C.: Amer. Jour. Pub. Health, 1924, xiv., 1047.
2. Sordelli, A., and Serpa, R.: Comptes rend. Soc. de biol., 1925, xcii., 824.
3. Hartley, P.: Brit. Jour. Exp. Path., 1925, vi., 112, and 1926, vii., 55.
4. Glenny, A. T., Pope, C. G., Waddington, H., and Wallace, U.: Jour. Path. and Bact., 1926, xxix., 31.
5. Glenny, and Pope: Ibid., 1927, xxx., 587.
6. O'Brien, R. A.: Brit. Med. Jour., 1928, ii., 434.
7. Dudley, S. F.: Quart. Jour. Med., 1929, xxii., 321.
8. Schmidt, H. and Scholz, W.: Arch. f. Hyg., 1925, xcvi., 251.
9. Eberhard, H. A.: Zeit. f. Hyg. u. Infect., 1926, cv., 614; Idem., Deut. med. Woch., 1928, liv., 91.
10. Soldin, M.: Münch. med. Woch., 1929, lxxvi., 1208.
11. Kelleher, W. H.: Annual Report Metropolitan Asylums Board, 1926–27, p. 199.

CLINICAL AND LABORATORY NOTES

PYREXIAL TREATMENT OF G.P.I. WITH SULFOSIN.

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These notes are confined to the treatment of general paralysis and the diagnosis in each case has been confirmed by examination of blood and cerebro-spinal fluid. They cover 12 successive cases all with well-marked clinical symptoms and treated with sulfosin (Leo). The introducer of this treatment, Dr. K. Schroeder,[1] claims to reach a high degree of pyrexia, but although 130 injections were given to these 12 patients there was a rise of temperature over 104° F. on only seven occasions. The highest average temperature in any one individual course was 103·2° F., and in the whole series there was only one rigor. Various methods were employed to enhance the pyrexial effect of the injections, but without appreciable result. It was assumed that the peak of the temperature depended on the rate of absorption; consequently the following methods were adopted: (*a*) application of kaolin poultices for two hours before and immediately after the injections; (*b*) massage after the injections; (*c*) injection of the material as hot as could be borne by the patient; (*d*) dilution or concentration of the fluid by 25 per cent.; (*e*) injection of the dose at two sites in the same leg; (*f*) injection of half the dose in each leg.

Table I.

Patient.	Course.	Injections.	Total c.cm. of sulfosin.	Average max. temp.	Average duration of temp. above 100° F.
A ..	First.	9	68	102·8	13 hours.
	Second.	12	90	102·7	18 ,,
B ..	—	12	86	102·5	16 ,,
C ..	—	12	81	101·7	11 ,,
D ..	—	10	150	101·7	12 ,,
E ..	—	9	97	102·7	16 ,,
F ..	—	10	142	102·5	15 ,,
G ..	—	7	36	102·3	11 ,,
J ..	—	5	45	101·9	18 ,,
K ..	—	10	87	103·2	20 ,,
L ..	First.	12	112	102·2	14 ,,
	Second.	9	145	103·1	19 ,,
M ..	—	13	169	101·7	10 ,,

Table II.

Amount of injection.	Number of such injections.	Average of temperature peaks.	Average of duration of temperature above 100° F.
Up to 3 c.cm. ..	12	101·8	10 hours.
5 ,, ..	34	102·0	13 ,,
10 ,, ..	55	102·4	16 ,,
15 ,, ..	6	102·5	18 ,,
20 ,, ..	22	102·7	16 ,,
30 ,, ..	1	100·8	5 ,,

From the results shown in the Tables it is concluded that dosage is not the only factor determining the height of temperature. On the assumption that an increase of dose above 10 c.cm. would result in lengthening the pyrexia, doses up to 30 c.cm. were employed at one injection (Table II.) but without the expected result; and it seems that the maximum dose required at one injection is 10 c.cm. Again, it was noted that whatever the amount of the injection the temperature began to rise with marked constancy in from 9–12 hours.

These 12 successive cases in which the treatment was undertaken were all in an advanced stage of the disease. Eight patients were intractable, maniacal, and vividly hallucinated. The mental benefit derived became evident after a few injections, whereas the general improvement was not experienced till after a month's interval. The noted physical changes were increase of weight and a reduction of anæmia. Those patients who on admission required a single room were, without exception, able after a few days to return to open dormitory.

Of the total of 12, two are now discharged "recovered," one having returned to his old employment; two will shortly be recommended for a "period of trial"; one, the most advanced case, is not likely to recover, and the rest without exception have shown amelioration of their symptoms in varying degree. The conclusions arrived at are that treatment with sulfosin is eminently suitable in advanced cases because of its harmless effect, especially on a degenerate myocardium. The facility of regulating the temperatures and of procuring the material widens the scope of the treatment, while the results obtained compare very favourably with statistics of induced malarial pyrexia.

My thanks are due to my medical superintendent, Dr. E. G. T. Poynder, for permission to publish this summary, and I acknowledge the willing assistance of Dr. Eric Wordley in examining the bloods and cerebro-spinal fluids.

[1] The Lancet, 1929, ii., 1081.

EXTREME INSTANCE OF THE TOXIC EFFECTS OF LUMINAL.

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AND
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The patient whose history is given below seems to have combined in her illness in such a remarkable manner so many of the recorded toxic effects of luminal that we think her case merits publication; a further point of interest is the resemblance of her condition to a progressive infection.

The skin—at one time and another—showed nearly all the features described by Sachs,[1] Caussade [2] and others, Millian,[3] and Menninger[4]; all the visceral and toxic effects—with the exception of hæmatoporphyrinuria, also mentioned by Menninger [4]—were present and, in addition, one or two new features which we have not found described. The mental state recorded by Carlill [5] in his patient who was inadvertently given grs. 120 of luminal in 12 days was not present. In our own experience of this drug we have previously seen macular rashes and confusional states, but never before such a remarkable collection of symptoms and signs.

The patient, a married woman of 47, was given gr. ½ of luminal three times a day for a month for a condition of hyperpiesis, which did not show any evidence of renal involvement. On the last day of the month an urticarial rash appeared on her arms and legs, and the luminal was stopped. The illness

which followed lasted about a month and can conveniently be divided into weekly periods.

First week.—The rash, which was at first urticarial, later became erythematous and then morbilliform. Her temperature varied between 99° and 102° F., and she had a good deal of abdominal pain, vomiting, and diarrhœa. Hyperpnœa was a marked and persistent feature and in her urine albumin, ketone bodies, and sugar appeared. At the end of this week an examination of the blood showed: Widal reaction negative; Wassermann reaction negative; blood-sugar, 88 mg. per cent.; blood-urea, 28 mg. per cent.

Second week.—The rash became scarlatiniform in appearance and began to fade; the gastro-intestinal symptoms continued, with the addition of rectal hæmorrhage; the pyrexia was maintained. New features were the enlargement of lymphatic glands in the neck, axillæ, groins, antecubital and popliteal spaces, and the appearance of a large and tender liver without any icterus. Bacteriological examination of the fæces at this stage showed nothing abnormal.

Third week.—The rash began to fade and the skin to desquamate, but the patient was very ill, with continued diarrhœa and nausea; the tongue was pale, smooth, dry, and fissured, and both the pyrexia and the albuminuria continued. A second Widal reaction was also negative.

Fourth week.—This marked a general improvement. The gastro-intestinal symptoms began to subside, leaving some abdominal distension; the hepatic and glandular enlargements went; the pyrexia was slight and intermittent. The macular rash reappeared but—in the main—desquamation proceeded steadily. Further examinations at this stage gave the following results: Blood-sugar, 96 mg. per cent.; urea, 41 mg. per cent.—a rise; cholesterol, 152 mg. per cent.; carbon dioxide combining power (van Slyke), 57 vols. per cent. Urine, a trace of albumin; no sugar or ketone bodies; no bile-pigments or excess of urobilin; urea, 3·6 per cent.; some pus cells and several hyaline casts. A spectroscopic examination did not show any hæmoglobin derivatives.

After this, general and rapid improvement took place. Glycosuria returned once more, but the blood-sugar remained normal at 88 mg. per cent. The patient was allowed up on the thirty-fifth day, but even after this there was a recurrence of the macular rash.

In the treatment, most of the remedies which were used were designed for the relief of urgent symptoms such as pain, vomiting, itching, and sleeplessness; in the more radical therapy—i.e., of assisting the elimination of the drug—we knew of nothing specific, but we were inclined to think that contramine and calcium were of some use. Diarrhœa was the most troublesome feature; many medicines were tried and the most effective appeared to be mist cretæ co.

In conclusion, we would like to express our thanks to Bayer Products Ltd. for their interest in this rare event of poisoning from a drug so widely used as luminal.

REFERENCES.

1. Sachs, I.: Brit. Med. Jour., 1925, ii., 1098.
2. Caussade, G., et al: Bull. et mém. Soc. méd. des hôp. de Paris, 1925, xlix., 1042, et seq.
3. Millian, G.: Ibid., p. 1090, et seq.
4. Menninger, W. C.: Jour. Amer. Med. Assoc., 1928, lxxxi., 14, et seq.
5. Carlill, H.: THE LANCET, 1925, ii., 596.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY: SUBSECTION OF PROCTOLOGY.

A MEETING of this Subsection was held on March 11th, Mr. LIONEL NORBURY presiding.

Dr. ARTHUR F. HURST opened a discussion on

Ulcerative Colitis, excluding Tropical Diseases.

He recalled the first discussion on this subject in England 23 years ago. At that date it was considered to be a rare and undiagnosable condition due to some terminal complication, and always fatal. Now, largely because of the use of the sigmoidoscope, knowledge of the condition and the prospects of sufferers had greatly improved, since the disease had been shown to be capable of control by treatment to a great extent. The appearance of the colon in bacillary dysentery, during life, was indistinguishable from that of ulcerative colitis. In 1923 L. S. Dudgeon had found that swabs from the ulcers of sporadic ulcerative colitis gave the Flexner bacillus. Last year Dr. Hurst removed a small adenomatous polyp from the rectum of a patient the subject of ulcerative colitis, so that he might take a swab from the raw surface left behind. That patient—a typical case—had been ill with ulcerative colitis for six years, and had developed a stricture and numerous polypi. From the depth of tissue below the adenoma Dr. F. A. Knott had isolated the Flexner bacillus. Such a positive finding was worth a great many negative ones. J. W. H. Eyre had shown that epidemics of dysentery occurred in English asylums, while D. Nabarro showed that many children supposedly to have summer diarrhœa really had dysentery. Confirmation was supplied by the success of antidysenteric serum in the early cases. In 25 per cent. of Dr. Hurst's cases achlorhydria was present; it was probably a predisposing cause of the colonic condition, since it meant the loss of the normal antiseptic barrier which prevented virulent bacteria from reaching the intestines. Until the war no complications of the disease appeared to have been recognised; it was thought that in ulcerative colitis strictures never developed. The reason the latter now occurred was that subjects of the disease did not now die so soon, and there was time for fibrous strictures to develop. In several instances a short-circuiting operation had led to a quick recovery. Admittedly some so-called polypi were nothing more than tags, but some were true adenomatous polypi. In rare cases the latter might become malignant. One patient seen by Dr. Hurst had all three stages at the same time: ulcerative colitis, with many ulcers, polypi, and carcinoma of the rectum. It was very important to recognise perianal abscess, and fistula in ano sometimes occurred. Lastly, he had seen many cases of the condition with arthritis of the same type as followed bacillary dysentery. He had not yet seen an instance of perforation.

As to *diagnosis*, he regarded the use of the sigmoidoscope as absolutely essential; for those who did not trust their use of it, a long proctoscope would show much, since in ulcerative colitis there were always ulcers in the rectum. The symptoms might be identical with those of carcinoma, and inspection was the only safeguard against mistake.

The most important general points in *treatment* were to keep the patient warm in bed and to give a generous diet, omitting only fibres, pips, and residue. In patients who were anæmic, with a low hæmoglobin value, transfusion of blood was of enormous value. For flatulence the patient should take charcoal. Lavage given with a soft catheter in the rectum was useful, but it must be given slowly. He did not think there was much advantage in a wash-out through an appendicostomy. Polyvalent antidysenteric serum should be given to every patient; from this he had seen dramatic results. In certain long-standing cases serum had no effect, though even these might recover. Treatment should

be continued until the sigmoidoscope showed that no trace of ulceration remained and the mucous membrane looked healthy. When achlorhydria was present the patient should take acid regularly for the rest of his life, with sufficient paraffin to keep the excreta soft.

Dr. CUTHBERT DUKES spoke on the

PATHOLOGY OF THE CONDITION.

In severe cases the ulceration was often most conspicuous opposite the longitudinal muscle bands of the colon, between which a thin strip of surviving mucous membrane could be seen. Stricture following fibrosis was found in 8·5 per cent. of the cases, and perforation occurred in 2·6 per cent. No ætiological theory provided a completely satisfactory explanation. The supposed relationship of the condition to bacillary dysentery was discounted by the bacteriological report returned, which was nearly always negative, by the absence of agglutination, and by the uncertain effects of anti-dysentery serum. The diplo-streptococcus of Bargen could be recovered from the ulcers, but it was found also in other types of ulceration and in normal people. Dr. Dukes's own idea was that sufferers from the disease were born with inferior intestinal organs which were very susceptible to trauma, and had a lowered resistance to bacterial invasion. Observations should be made by the pathologist on the fæces, blood, and pus, on the relative proportions of streptococci and staphylococci, and on the presence of late- and non-lactose-fermenting bacilli and hæmolytic bacteria. He could do more than at present if he were given a sample of the patient's blood and had the opportunity of collecting his cultures from an ulcer through the sigmoidoscope. He only recommended an autogenous vaccine when the agglutination test was positive for bacteria from an ulcer.

A PLEA FOR THE SIGMOIDOSCOPE.

Mr. J. P. LOCKHART-MUMMERY said that the great majority of cases of ulcerative colitis (apart from tropical dysentery) were due to an infection of the mucous membrane of the colon by streptococci, commonly the *S. viridans* or *fæcalis*. Every grade was found, and mild cases were not uncommon. The latter were often effectively treated by non-operative methods, though he had seen mild cases suddenly become septicæmic. Some recent views that an examination of the bowel in these cases with the sigmoidoscope was not necessary he regarded as a retrograde and pernicious doctrine, for a mere examination of discharges from ulcers did not sufficiently indicate the severity of the case. The instrument was needed to diagnose the disease from cancer and to watch the results of treatment. Its passage did not cause pain, no anæsthetic was wanted, and there was no danger. Appendicostomy he regarded as curative if done before the bowel had become severely damaged; it could be carried out under local anæsthesia, or gas and oxygen. It gave the surgeon immediate control over the disease and enabled it to be held in check. At St. Mark's Hospital all other treatments had been tried, but the staff had returned to appendicostomy, not only to prevent recurrences, but to save life. Ulcerative colitis showed a great tendency to relapse. A view appeared to prevail in medical circles that the condition should be treated by lavage and medical methods, operation being resorted to only when those measures failed. Mr. Lockhart-Mummery was sure that such a policy did not give the patient the best chances of recovery. The operation, in his experience, seldom failed (when done in an early stage) to cure the patient. But he insisted that the appendix should not be opened until the skin wound had healed; otherwise severe infection of the wound was likely from the infected mucous membrane of the appendix. A strong point in favour of operation was that it obviated the need for the patient to spend long periods in bed from time to time. A rare after-result was stricture of the colon. Joint changes and septic arthritis were also rare. The frequent complication of amœbic dysentery, liver abscess, seldom occurred after ulcerative colitis. Perforation of the bowel wall occurred only in the acute stage. Usually that accident was fatal, since the bowel was in a bad state for an operation. Ulcerative colitis, he contended, bore no relationship to adenoma of the colon; the condition following ulcerative colitis was one of granuloma.

THE SIGMOIDOSCOPE CONDEMNED.

Dr. LETHEBY TIDY said that in the war he was in charge of a large dysentery hospital, and there he grew to adopt the methods of treatment which he still employed. Since the war he had had 27 such cases in private practice, and among them three deaths. Five years ago he ceased doing sigmoidoscopy, and since then he had had 13 cases with no death. He had not had one of these cases operated upon since the war; in his view neither operation nor sigmoidoscopy was necessary. Certain principles must be adopted in treating the disease. The patient must be fed well, kept warm, and given fluid by the mouth. Never must morphia be injected. Medicated enemata should not be given in the acute stage, nor in the early stage of treatment of a chronic case. Enemata must not be given daily. He advocated three stages in treatment per rectum: (1) starch and opium enemas; (2) colonic washes; (3) medicated enemas in the late stage, and only when the stools were less frequent than five a day. He had found no good effect from the use of vaccines, and he could not confirm from his experience Dr. Hurst's good results from serum; he had no experience of ionisation for this condition. He did not see how the results he had attained in recent years could be bettered by surgery, though he cordially joined with those who paid tribute to Mr. Lockhart-Mummery's pioneer work in sigmoidoscopy and appendicostomy in bringing down the mortality figure from the appalling 80 per cent. Diagnosis was easy without the passage of any instrument.

Dr. GRAHAM HODGSON and Dr. P. J. BRIGGS demonstrated films of cases of chronic ulcerative colitis.

Dr. F. J. POYNTON spoke as a sufferer from an acute form of the disease in his student days, and believed that nervous and physical strain was probably a determinant in his case. He was thankful that in those days neither the sigmoidoscope nor an operation were likely to be tried, owing to the great pain and distress they caused. He did not see that the sigmoidoscope would enable one to say whether a patient would be cured or not, unless the vision could be carried to the cæcum. No reference had been made to a most distressing complication—namely, spasm of the colon. The best thing for that was morphia. Treatment was always a matter of individual experience. In very bad cases, with severe hæmorrhage, he had had good results from a careful liquid diet, using opium and bismuth by the mouth, combining it with kaolin.

THE BACTERIAL CONTENT OF THE BOWEL.

Dr. L. P. GARROD spoke of cases which he had seen or of which he had collected particulars in the last two or three years, chiefly at St. Bartholomew's

Hospital. Of cases admitted with the label ulcerative colitis, four proved to be amœbic dysentery; some had been ill for some time, one for three years. None had dysentery bacilli in their stools. About 20 had various bacteria, including coliform bacilli of aberrant types, which might or might not be significant. Eleven out of 17 cases showed Bargen's bacillus. He found it easy to grow the coccus in dextrose broth which had been rendered anaerobic by a paraffin seal. It grew rapidly in sugar. The anaerobic conditions did not affect its growth, but they did affect the growth of other bacteria. Dr. Garrod regarded the presence of this organism in this disease as significant. It could only be found by this method in material obtained from one of the ulcers; it was not apparent in fæcal material, and it could be demonstrated in great numbers in direct films from muco-pus taken from an ulcer. He considered it worth while in all cases of ulcerative colitis to do an exhaustive bacteriological examination, since the classification of types on clinical grounds had, he thought, reached its limit. Progress was most probable from a classification according to bacterial content, the results of treatment being assessed on that basis. It must be remembered that tuberculous ulceration of the lower part of the descending colon could occur in people who showed no other sign of tuberculosis in the body.

APPENDICOSTOMY.

Sir CHARLES GORDON-WATSON said he had seldom been without one or two cases of ulcerative colitis in his wards, and he had tried every advertised form of treatment. His general impression was that some cases did well, others did not. One or two brilliant results had been obtained from the use of anti-dysenteric serum; but he had tried it on dozens of cases since without being able to satisfy himself that real benefit accrued. Even patients who did well on serum relapsed later, and one who came back after a year or two failed to respond again to the serum. Except in mild cases, he always carried out appendicostomy. He did not think that the proximal colon could be adequately dealt with per rectum, and he regarded appendicostomy as essentially a life-saving measure in many cases. He had used barium sulphate solution for the irrigation of the colon from appendicostomy. For chronic cases he was a believer in transfusions. An infusion every four weeks always left the patient definitely better. He demonstrated X ray films of post-operative stricture, one of which had persisted for five years. He also showed skiagrams of tuberculous ulcerative colitis with three strictures.

DIATHERMY.

Dr. KERR RUSSELL said that diathermy had been used for this disease, a cylindrical electrode being inserted into the rectum, and the inactive electrode being fastened round the waist. The current so passed had a marked antispasmodic effect, and stimulated both the blood and the lymph circulations. He described an improved method of carrying out colonic lavage. It was by means of a special rectal catheter, which could be retained in position during the treatment. A large container was used, eight gallons being the capacity, and it was connected through a valve with the rectal catheter. Hypotonic saline at a temperature of 104° F. was used, and the small residue of fluid which did not come out again gradually worked its way to the higher diseased areas. The treatment lasted half an hour, and during that time 50 to 60 evacuations took place.

Dr. J. BURNFORD said he had had 48 cases of ulcerative colitis. Some cases were curable, some incurable, and this was understandable if one looked at specimens from the anatomical standpoint. Five of the 48 cases died. He had found the results of ionisation to be very good. He believed in rest in bed and a generous diet for these patients. Medical treatment called for much patience and attention to small details.

The PRESIDENT regretted to hear criticism of the sigmoidoscope, especially since most people dealing with abdominal cases had confused ulcerative colitis with carcinoma of the colon. He could not see the grounds for objection to the use of this instrument; it was not dangerous, and it could be passed without an anæsthetic. He favoured appendicostomy in these cases.

Dr. HURST, in reply, said pain was to him a call for charcoal, as it was the pain of distension due to gas, and this gas was absorbed by the charcoal. A difficulty in diagnosis often encountered was that between stricture due to spasm and that resulting from organic disease. The administration of a barium meal instead of a barium enema was useful here. The meal was held up by an organic stricture for three or four days, but in spasm the hold-up was of short duration.

SECTION OF OTOLOGY.

A MEETING of this Section, held on March 6th under the presidency of Mr. ALEXANDER TWEEDIE, was mainly devoted to a discussion on the

Effects on Hearing following Fractured Base of the Skull.

Mr. EDWARD D. DAVIS, in opening the discussion, observed that this subject had gained added importance from the increasing frequency of motor and other street accidents. Too often patients suffering from fractures of the base of the skull were not sent for an aural examination until some weeks after the accident, and then only because deafness existed, or because a question of compensation had come into the case. Inspection of the ears immediately after the accident would be more valuable, since the otologist could then better estimate the extent of the damage, and his findings might be useful in diagnosis, treatment, and prognosis. Most of the fractures of the base involved the middle fossa, which was to be expected, seeing that a line of weakness extended through both Gasserian fissures and the Eustachian tubes to the foramina lacera media, the sphenoidal sinus being a connecting link. Fracture of the middle fossa usually followed this weak line, and the thin roof of the canal of the tensor tympani and Eustachian tube, and the roofs of the tympanum and mastoid antrum were nearly always involved in this fracture. In patients who survived the accident the middle ear was practically always found to be involved. Only seldom in non-fatal cases was the capsule of the internal ear or labyrinth fractured. A few fatal cases only, when the accident had been of great violence, showed fractures of the internal ear. In 1916 Mr. J. S. Fraser, of Edinburgh, recorded and showed microscopical sections of four cases in which the fractures involved the labyrinth in two, and the middle ear only in the others. The two middle ear cases survived for a period, later dying of meningitis, but the cases in which the labyrinth was damaged were soon fatal. When the line of fracture was through the Gasserian fissure, the external auditory meatus was often involved, the fracture appearing to split the meatus longitudinally. In exceptional cases—i.e., those in which the force was very great—the fracture extended across the upper

or anterior surface of the petrous bone into the internal auditory meatus. Fractures of the posterior fossa began in the thin bone of the cerebellar fossa, and radiated into the lateral sinus groove on the same side; there they passed either along the groove for the inferior petrosal sinus, or across the petrous pyramid near the inner edge of the lateral sinus, through the cancellous bone surrounding the mastoid antrum and semicircular canals, and behind and external to the internal auditory meatus. Even a moderate blow on the temporal fossa might produce a radiating fracture cracking the roof of the middle ear, when an effusion of blood into the tympanum would occur without rupture of the drum. No blood would be found in the auditory meatus, but the typical bluish drum would be seen. In four such cases the only indication was deafness; there had been some doubt whether the skull was fractured until hæmorrhage into the middle ear confirmed it. These particular patients recovered hearing in three weeks, when the blood had been absorbed and the drum was restored to normal. More frequently the upper half of the drum was ruptured, and if the effusion of blood was accompanied by a cerebro-spinal fluid leakage, the fracture must be regarded as a dangerous one, opening up the subarachnoid space. When this occurred the case was usually fatal. Profuse and prolonged hæmorrhage from the ear indicated that the middle meningeal artery or the lateral sinus had been ruptured, and operation was urgently indicated. When this intracranial hæmorrhage found a vent through the ear, the ear should not be firmly plugged. Bleeding into both ears was a grave occurrence, the mortality of these cases being 66 per cent., as contrasted with 39 per cent. when only one ear bled. When the patient had had suppuration of the middle ear before the accident, there was a great likelihood of meningeal infection, with a correspondingly grave outlook. Mastoid suppuration had been known to follow a fracture, and meningeal infection might ensue. A peripheral paralysis of the facial nerve occurred in about 46 per cent. of cases of fracture of the middle fossa of the skull; in a few cases the eighth nerve was also involved. The onset of the paralysis was almost immediate, but if it was delayed it was probably because of hæmorrhage into the facial canal. This paralysis had disappeared eventually, sometimes after a long interval, in all Mr. Davis's cases, but two of the patients had a facial tic or twitch as a sequel.

Three grades of injury could be recognised: (1) Hæmorrhage into the middle ear only, without rupture of the drum, presumably due to a crack in the roof of the middle ear. The typical bluish drum was the indication. (2) Rupture of drum, with hæmorrhage from the auditory meatus; the rupture was usually in Shrapnell's membrane. (3) The more severe fractures, splitting the hard bony capsule; cerebro-spinal fluid escaped, the facial nerve was paralysed, and usually death occurred. In a number of the cases seen by Mr. Davis no deafness was reported; 25 of the patients sent to him on account of deafness had the middle ear type. The four patients in whom effusion of blood into the middle ear was the only lesion detected had marked middle-ear deafness when they were first seen. Hearing was completely restored when the blood disappeared after three weeks, and then no lesion was detectable. Patients whose fracture was followed by local suppuration and inflammation suffered most loss of hearing, and their deafness was permanent. Probably all victims of injury to the internal ear died. Tinnitus occurred in some of the more seriously injured and in one or two highly-strung patients, and this symptom might persist for a year or more. It was not clear what produced this tinnitus, and the lesion was not always in the internal ear. Most of the tinnitus cases showed only an increased excitability of the labyrinth. A few of them complained of giddiness, not true vertigo, but unsteadiness, a "swimmy" feeling, and lack of confidence in negotiating traffic. This indefinite vertigo was considered to be of central origin. The correct attitude towards these cases of ear injury was not always one of masterly inactivity; the onset of suppuration should be carefully watched for. Prolonged rest in bed was essential, with a minimum of interference with the ear. The head was kept raised and the auditory meatus was cleaned with spirit. The meatus should not be packed with gauze, or syringed, and no drops should be used. But the onset of suppuration changed the aspect of the case and therefore the attitude of the surgeon; vigorous efforts to obtain free drainage must be made. If necessary, the drum should be incised, and a simple mastoid operation must be done on the slightest indication, as gently as possible, a motor burr offering the minimum of jarring.

DISCUSSION.

The PRESIDENT confirmed the desirability of consulting an aural surgeon early on these cases of skull injury; too often he was not called in until weeks after the concussion was sustained, and then usually because the patient had deafness and loss of the sense of smell.

Dr. DAN MCKENZIE declared that these fractures were now becoming much more common, especially in cities and towns; in motor accidents fractured base was the prevailing lesion. Many of the deaths from meningitis were doubtless due to infection having entered from outside through the meatus and middle ear, because of a fracture of the temporal bone. The aural surgeon, if consulted early, might be able to obviate some of the fatalities by careful treatment of the meatus soon after the accident. Meningitis might not supervene until six months after the accident, and J. S. Fraser had recorded a case in which a year had elapsed. One should always be ready to operate if there was a danger of extension to the meninges.

Mr. LIONEL COLLEDGE related three cases. He did not consider that nerve deafness was very rare in cases of fracture of the base. He was doubtful whether suppuration constituted a call for operation, even when its presence was established. He instanced the case of a coachman who fell off his box, and when brought to hospital had a very profuse suppuration in both ears. No operation was performed, and in six weeks the patient made a good recovery, with good hearing.

Mr. L. GRAHAM BROWN said that usually several days or a week elapsed before he saw hospital cases of fractured base, and members would agree that this delay was unjustifiable. Private patients were often brought at a still later stage in connexion with compensation. Often the case was complicated by suppurative otitis media, and it was very difficult to say whether the accident had caused the latter, or whether it had existed previously.

Mr. HAROLD KISCH referred to the value of X rays in the diagnosis of difficult cases. The matters on which the opinion of the otologist was usually sought were: (1) if there was bleeding from the ear, was it due to fractured base; (2) was the damage to hearing likely to be permanent; (3) what was the outlook in

regard to life? Sometimes bleeding proceeded only from the bony meatus.

Mr. F. W. WATKYN-THOMAS said a fractured labyrinth did not always heal by bony union, but by scar tissue; in such cases any later infection of the ear would be apt to set up meningitis because of this ill-guarded labyrinth. A point of importance was the occurrence of late changes in hearing. If as a result of the accident some blood entered in the perilymphatic spaces, organisation of that blood might cause the nerve deafness which occasionally followed as long as 18 months afterwards.

Mr. H. V. FORSTER spoke of cases of recovery from middle-ear deafness following severe head injury diagnosed as fractured skull. Sometimes nerve deafness came on after only slight injury. He also spoke of a patient who had a constant dripping of cerebro-spinal fluid over a considerable period following an accident; a fatal termination was expected but he got quite well. The assessment of compensation would always be difficult in these cases unless the aurist saw them early.

Mr. HERBERT TILLEY had often thought that the tinnitus from which these patients suffered was of cerebral origin. This was supported by the fact that in extreme cases the auditory nerve had been divided inside the skull, and still the tinnitus persisted. He agreed that the less done to these fracture cases the better. Cranial surgeons favoured keeping the patient under large doses of sulphate of magnesia to reduce the tendency to œdema of the cerebral structures.

Mr. J. F. O'MALLEY dealt with the question of prognosis in relation to the escape of cerebro-spinal fluid. Though this escape indicated a very severe lesion, the mere fact of its occurrence did not justify a bad prognosis. What was of most importance was the underlying lesion. He related the case of a man with an old mastoid condition, operation on which resulted in a small daily loss of cerebro-spinal fluid over five months (the total loss being estimated as seven gallons) without any apparent detriment to health.

Sir JAMES DUNDAS-GRANT said that sometimes the question arose in these cases whether suppuration seen was a result of the recent or of an old-standing injury. The condition of the Eustachian tube gave a clue, because if that was narrow, probably the suppuration was of old standing. Tinnitus, in his view, was often as much due to the concussion as to local damage in the ear. Perchloride of mercury seemed to have an extraordinarily good effect on percussion cases.

Mr. N. S. CARRUTHERS emphasised the need for making sure that exuded fluid after an accident really was cerebro-spinal fluid.

Mr. DAVIS, in a brief reply, said he had found the diagnostic use of X rays in these cases very disappointing; this was unfortunate, since skiagrams could now be taken without having to transfer the patient to the X ray room.

SHEFFIELD HOSPITALS.—At the annual meeting recently of the Sheffield and District Association of Hospital Contributors it was stated that the hospitals of the city owe £92,950 to the banks. Mr. M. Humberstone, the president, suggested that the unemployed should be induced to join the penny-in-the-pound scheme, since the Joint Hospitals Council had given them the same facilities for convalescent treatment, ambulance service, and travelling vouchers as the employed contributors.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASE.

AT a meeting of this Society in London on Feb. 27th Mr. DAVID LEES (Edinburgh) gave a presidential address on

Gonococcal Arthritis.

The earliest descriptions of gonococcal arthritis in England, he said, were those of John Hunter, Astley Cooper, and Benjamin Brodie. After the discovery of the gonoccocus by Neisser in 1879, the organism was found in the joint fluid, and later in the blood and lymph stream of patients suffering from acute arthritis; this definitely established the ætiology of the condition.

Nearly all the figures concerning the incidence of gonococcal arthritis give a wrong impression of its prevalence; they were quoted by workers holding hospital appointments who came in contact with most of the cases of arthritis but only dealt with a proportion of those suffering from gonorrhœa. In Mr. Lee's series of over 13,000 patients at the Royal Infirmary, Edinburgh, there were 388 cases of gonococcal arthritis, 324 of which were acute or subacute. The incidence in men was 3·3 per cent. and in women 1·8 per cent. Joint complications in gonorrhœa were four to five times as common in men as in women. In 200 cases of vulvo-vaginitis no cases of arthritis had occurred, although some American workers stated that it was a common complication of vulvo-vaginitis in children, and gave figures as high as 40 to 50 per cent.; two cases had occurred in association with ophthalmia neonatorum. The chief predisposing causes were lack of treatment in both sexes, too active exercise during the acute stage, and trauma to a joint. Alcohol also predisposed to it, and as with other complications in the female it was apt to occur after menstruation. Although the condition was a septicæmia, the organisms in the blood were few in number. In the joint fluid it was difficult to demonstrate them after a period of five or six days. There were a few cases of arthralgia which might be toxic in character and not due to an organismal infection of the joint.

CLINICAL FEATURES.

Gonococcal arthritis might occur at any stage of gonorrhœa, but in the men there usually was an infection of the posterior urethra, and the prostate and vesicles. In the female the common foci of infection were the cervix and the Fallopian tubes. The knee-joint was most frequently infected (64·2 per cent. of his cases). In 85 per cent. of his cases the condition was polyarticular and in 15 per cent. monarticular. Acute cases could be subdivided into four clinico-pathological types:—

1. Arthralgia, with no physical signs of disease in the joint.
2. An acute synovitis with an effusion of fluid into joint. In some of these the capsule and the periarticular structures are thickened and œdematous.
3. Acute arthritis involving the synovial membrane and articular cartilage with a sero-fibrinous exudate into the joint. In these cases the capsule and the periarticular tissues are nearly always attacked.
4. Acute arthritis with purulent exudate involving all the structures. This type is rare.

Subacute and chronic cases showed two clinico-pathological types:—

1. The synovial type involving especially the knee-joint, and simulating a tuberculous joint.

2. Polyarthritis involving both the synovial membrane and articular surfaces. This type attacks the small joints more readily; adhesions form easily and deformity results.

There were great variations in the symptomatology, but the main point in which most cases of gonococcal arthritis differed from arthritis due to other conditions was the tendency to involve all the periarticular structures and especially the tendon sheaths. Myositis was a common accompaniment, and the wasting of the muscles in association with chronic gonococcal arthritis was more pronounced than in tuberculous disease.

The main mistakes in diagnosis arose from failure to think of the gonococcus as a possible cause of the joint condition, and failure to examine the genito-urinary system for evidence of a focus of infection. In acute cases there was little difficulty; in subacute cases attention must be concentrated on the condition of the prostate and vesicles in the male, and on the upper genital tract in the female. In both sexes when there was no evidence of disease in the genito-urinary system an injection of gonococcal vaccine to provoke a focal and local reaction might assist in the diagnosis. The complement-fixation test for gonorrhœa, if positive, was also of assistance in diagnosis, and in his own series close on 80 per cent. of cases gave positive reactions to this test. A negative test did not exclude gonococcal infection. The test was most valuable in those cases in which the advantages of direct bacteriological proof were lacking. An intradermal skin test on the principle of the Pirquet test had been carried out in 1000 cases of gonococcal complications in his clinic and had given 80 per cent. of positive reactions, while there were only 0·6 per cent. of false positives; 98 per cent. of the cases of arthritis gave positive reactions. Radiographic examination of the joint was of little help in diagnosis, but was very valuable from the point of view of prognosis, and almost all cases could be cured in which there was no articular destruction on examination with X rays. The prognosis was excellent in all cases of acute and subacute arthritis, except in pyarthrosis; in the latter surgical interference was required, and there was generally some loss of function. In chronic arthritis the amount of recovery in the joint depended on the previous damage; the joint condition could usually be made stationary if the original focus of infection was eradicated. There was no justification for the pessimistic outlook of some authors who stated that acute arthritis seldom ends by resolution, and usually terminates in ankylosis. In the experience of Mr. Lees, a joint infection by the gonococcus if not effectively treated is apt to be attacked later in life by rheumatoid arthritis.

The complications which occurred in the cases under review were as follows: keratodermia, 12 cases; gonococcal pleurisy, 1 case; periostitis, 3 cases; spurs on the os calcis, 6 cases. Myositis was present in 80 per cent. of the cases and tuberculous infection of a gonococcal joint occurred in one case.

TREATMENT.

It was important (*a*) to treat the original focus of infection in the genito-urinary canal, and the zone to which it may extend locally; (*b*) to deal with the infected joint locally, and relieve pain and prevent adhesions; (*c*) to administer specific treatment through the blood stream to influence the blood-borne infection. In association with these three methods every effort must be made to raise the resistance of the patient. In every case, whether acute or chronic, the first essential was to treat the original site of infection. Many workers were carried away by their enthusiasm for treating the infected joint and countless surgical measures had been advocated. In acute cases only seven of his series had been operated on and in all of these a pyarthrosis existed.

In the treatment of the original focus of infection a great deal of attention had been given to sterilisation of the seminal vesicles by measures such as vasotomy and vasostomy, while others advocated vesiculectomy and vesiculostomy. More recently injection of antiseptics into the vesicle through the rectal wall had been advocated. While certain workers, especially in America, considered vasostomy an essential part of the treatment of gonococcal arthritis, Mr. Lees had found that these measures had not resulted in the striking cures claimed. In his opinion sterilisation of the vesicle alone would not eliminate the gonococcal infection completely, for the prostate gland and other areas were almost always involved. He had seen cases in which this operation had been performed by experienced surgeons, and he had been able to isolate the gonococcus in culture from the prostatic secretion after the operation. In the present series of 324 acute and subacute cases 98 per cent. were cured without any operation and the infected joint restored to good function. In chronic cases, which were resistant to other forms of treatment, there might be a field for vasostomy if the vas was still patent. Vesiculostomy and vesiculectomy could not be expected to clear up destructive lesions in the joint and cartilage.

Of recent years diathermy had been widely advocated as a means of producing deep-seated heat throughout the tissues without leading to any chemical change in the tissues. The tissues could be raised to a temperature of 112° F. to 114° F., which was stated to be lethal for gonococci. Mr. Lees thought that diathermy alone applied to the prostate and seminal vesicles was not a cure for gonococcal infection of these areas. Diathermy applied to the original focus of infection and at the same time to the joints relieved the pain, reduced the swelling, and assisted in vascularising the parts. After working with this method for six years, he was not satisfied that it was an absolute cure for gonococcal arthritis; it was, however, a helpful adjuvant method in association with other forms of local and focal treatment. It was even more helpful in subacute and chronic cases than in acute, but did not enable us to dispense with massage of the prostate and vesicles, or with voluntary and passive movement of the joints with a view to restoring them to full function. It was not in itself a complete cure of either the prostatic or vesicular infection or of the joint infection.

The various operations on the joint included joint puncture and aspiration, incision and lavage, and incision and drainage. In view of the excellent results obtained by the speaker by conservative treatment of the joints, there appeared to be a very small place for operative treatment, except for relief of tension, and in cases of gross purulent arthritis. If radiography of the joint showed no cartilaginous destruction the best local treatment was undoubtedly fixation during the hyperacute stage to relieve pain. At the earliest possible moment, however, voluntary and passive movements should be instituted and this should be followed later by massage. Active and passive movement was one of the most important factors in restoring the joint to complete function. In chronic arthritis it was necessary to have the coöperation of an orthopædic surgeon to advise the measures which might be taken, surgically or otherwise, to obtain the best functional results in the joint.

VACCINES AND CHEMOTHERAPY.

In speaking of specific therapy through the blood stream, Mr. Lees discussed the use of vaccines, of sera, and of the various proteins and chemotherapeutic substances which had been tried. A very large percentage of acute and subacute cases reacted well to vaccines, and a detoxicated gonococcal vaccine used in conjunction with other methods of treatment gave consistently good results. In any case which was hanging fire, or if a mixed infection was present, he advocated combining this vaccine with an autogenous vaccine. In very resistant cases he had good results from the combination of vaccines and proteins as in the preparations arthrigon and gono-yatren. In chronic cases protein shock was more valuable than in acute cases and he advocated the use of a protein, such as milk, alternating with the vaccine.

The chemotherapeutic substances which he found most useful were the 914 preparations, and in minute doses he had found them of considerable value in cases of arthritis complicated by keratodermia. In chronic arthritis, intravenous injections of sodium iodide were often helpful. He was not impressed with the result of injections of ortho-iodoxy-benzoic acid.

Apart from the eradication of the original focus of infection, the important points in treatment, Mr. Lees said, were immobilisation for a short period to relieve pain, early mobilisation to assure recovery of joint function, local applications to relieve pain, and Bier's congestion for this, and to create a passive hyperæmia. Passive hyperæmia was also useful in chronic cases and mild counter-irritation increased the blood-supply and assisted in the absorption of inflammatory products. Only seven cases had required operation. In such cases free incision and washing out of the joint with eusol or with a solution of formaldehyde in glycerin was best. The operative measures advocated were often far too complicated, and in his experience very few acute or subacute cases of gonococcal arthritis required any operative interference. In chronic cases operation was required to correct deformity.

SUMMARY.

Summarising his observations Mr. Lees said that among 13,000 cases of gonorrhœa, arthritis occurred as a complication in 388 (2·9 per cent.). The original focus of infection in men was usually in the prostate gland and seminal vesicles; in women in the urethra, cervix, Bartholinian gland, and Fallopian tubes. Operative treatment was rarely required, in either acute or subacute cases, either on the vesicle or on the affected joint. The prognosis was good in all acute and subacute cases. In 324 acute cases there was one death; in 276 there was complete restoration of function and no evidence of the previous joint infection; and in 17 there was slight limitation of movement with a good functional result; while 30 of the cases were transferred to other hospitals or did not complete their treatment. The result in 64 chronic cases varied with the degree of involvement of the intra-articular and periarticular structures. Freedom from pain was usually obtained and a better functional result. Freedom from recurrence depended on clearing up the original focus.

MENTAL DEFECTIVES AT PORTSMOUTH.—A colony for mental defectives is to be erected on Portsdown Hard. There will be 320 beds, and the scheme will cost £123,000. The total annual charge is estimated at £27,344 against a present charge for mental defectives of £17,789.

MEDICAL SOCIETY OF LONDON.

AT a meeting of this Society on March 9th Dr. R. A. YOUNG took the chair and a discussion on the

Treatment of Lobar Pneumonia

was opened by Lord DAWSON, whose paper appears in full at p. 625.

Prof. W. H. WYNN (Birmingham) said that reaction to a vaccine only occurred in a sensitised person whose cells were allergic. If the specific antibodies were not present there was no sensitisation and reaction was impossible. Specific antibodies were present in all states of chronic infection, but in acute infections they were only present after a certain interval had elapsed, for their formation was comparatively slow. The problem was to try to produce an early rise in antibody formation and early immunity when the intoxication curve was rising and was more easily overtaken. A vaccine, however, had the immediate effect of producing non-specific antibodies. Sir Almroth Wright had shown that by adding non-specific antibodies the blood became highly bactericidal; and it was this non-specific form of immunity which was exploited in the early treatment of acute infections. The object of the vaccine treatment of pneumonia was to cause immunity while the curve of toxæmia was rising and while the leucocytes were vigorous and able to respond—i.e., while the circulation of blood through the lung was unimpeded. Pneumonia should be regarded as an acute emergency, the object being to control the infection before it got out of hand, and to prevent the onset of symptoms which it would be impossible to treat. The result in the treatment of a case of pneumonia depended largely on what could be done in the first 48 hours. For lobar pneumonia Prof. Wynn used a vaccine containing only the pneumococcus; for influenzal broncho-pneumonia he used one containing equal numbers of pneumococci, streptococci, and influenza bacilli. When he was not certain whether the pneumonia was lobar, he used the mixed vaccine. For the adult the usual dose was 100 millions of each, but he often used twice or even three times that dose, and for children larger doses than would seem proportional. Injections should be made as early as possible, and it was an enormous advantage to have the vaccines always at hand. If injection was done in the first 24 hours, the temperature would usually fall within 48 hours, this rapid defervescence being one of the most striking and dramatic happenings in the range of therapeutics. If injection was delayed to the second, and especially the third day, it was much more difficult to overtake the infection. At a still later stage, when the lung had become solid, there was little chance for this or any other form of treatment. Prof. Wynn showed a series of slides of charts of cases of penumonia and other infections to establish the general principles underlying vaccination against acute bacterial conditions.

Dr. R. A. O'BRIEN said he was still far from convinced about the efficacy in pneumonia of anti-pneumococcal serum. But for 20 years he had been working at serology, and he would be much disappointed if serum treatment did not prove one of the things which had come to stay. Avery and others had arrived at the conclusion that when serum was given the progress of the disease was stopped, usually after one or two doses. Avery and Cole summed up their results in 400 cases treated at the Rockefeller

Institute by saying that the mortality was about 10 per cent. They used unconcentrated serum from horses. After speaking in detail about various laboratory tests and the processes of titration, Dr. O'Brien enlarged on the difficulties in the way of national provision for the control and treatment of these cases.

Dr. NATHAN RAW spoke of treating 250 consecutive cases of penumonia, most of them lobar, with the Burroughs Wellcome stock pneumococcal vaccine. In some of the cases the result was dramatic, and the total mortality was 3 per cent. better than in the ordinary run of cases. But a stock vaccine was largely a shot in the dark; and he felt that if a vaccine made from the particular pneumococcus causing the disease in the individual patient could be provided, the results would be extremely good. He had been told that there were 30 distinct varieties or types of pneumococci. When in the cases he treated he could get autogenous vaccines made, there was a striking result. In most cases brandy gave good results.

Dr. R. S. JOHNSON spoke of the results achieved by himself, in conjunction with Dr. Richard Armstrong, in the serum treatment of pneumonia. The effort was to introduce as much serum as possible in the first 24 hours, allowing a sufficient interval between the injections for the patient to recover from the reaction, and so as to avoid overloading the tissues with a foreign substance. The ideal interval was eight hours. The features considered when deciding whether to leave off the treatment were the clinical condition and degree of toxæmia, the subsidence of the pyrexia, and the leucocyte count. Immediate shock or collapse following the treatment was very rarely seen, and anaphylactic shock in only one case—namely, in type 2. The temperature in the reaction reached 104° and 105° F. In some of the cases death seemed to have been definitely averted.

Dr. R. ARMSTRONG supported what Dr. Johnson had said, emphasising the striking improvement in the patient's condition which resulted from the treatment; anoxæmia, restlessness, the toxic appearance, and the delirium were markedly reduced. He hoped and believed, with Park, that this serum had come to stay. He hoped that shortly the London County Council would institute laboratories from which the serum could be supplied to every practitioner.

Dr. WALTER BROADBENT spoke of his experiences with a very efficient antipneumococcal serum in Italy during the war, and agreed with all that had been said as to the dramatic result when the serum was potent.

Dr. C. B. HEALD asked whether the opener and others had tried diathermy in the treatment of pneumonia.

Prof. WYNN, in the course of his reply, said that much of the action of serum was the non-specific action of a protein. Speaking of alcohol, he said that in the epidemic in February, 1929, he had two wards, and every patient on one side of each ward had alcohol as a routine—so much brandy or whisky every four hours—those on the other side of the ward having no alcohol. The patients were admitted under the same sisters and in the same stage of the disease. Among those who had alcohol the mortality was 68 per cent., while among those who did not have alcohol the mortality was 21 per cent.

Lord DAWSON, in his reply, deprecated the routine use of alcohol in the disease; it should be reserved for the restless anxious patients who could not sleep. He insisted on individuality in treatment and assessment of patients' condition, which was the essence of successful clinical work. The physician's mind should not be allowed to stray too much on statistics. He thought too much stress was laid on the value of autogenous vaccines in acute infections, but the results placed before the meeting by Prof. Wynn had impressed him very much.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

AT a meeting of this Section on Feb. 20th Dr. A. H. DAVIDSON, the President, took the chair, and Dr. O'DONEL BROWNE read a paper on

Anæsthesia in Labour

by the method of Gwathmey. The routine treatment, he said, consisted of a hypodermic injection of morphia gr. ¼ and 2 c.cm. of 50 per cent. magnesium sulphate solution as soon as labour was definite in a multipara or as soon as the os was three-fingers dilated in a primipara. Twenty minutes later another 2 c.cm. mag. sulph. was given. The ears were plugged and when the analgesic effect of these drugs was wearing off, anæsthesia was induced by rectal injection of a mixture of anæsthetic ether 2½ oz., quinine alkaloid grs. 20, absolute alcohol ℥ 40, and olive oil 2 oz. This was given slowly between the pains. Twenty minutes later a further dose of 2 c.cm. mag. sulph. was given intramuscularly. It was found that mag. sulph. prolonged the action of the morphine without increasing its toxicity. Rectal ether instillations were repeated whenever necessary throughout labour. Labour progressed normally, and the coöperation of an analgesic patient assisted greatly when any manipulation was needed. In one case of uterine inertia the patient was under anæsthesia for 37 hours, with no ill-effects to mother or child. No bowel complications were noted and the puerperium showed no abnormality. No cases of asphyxia neonatorum occurred and lactation was easily established. There was one stillbirth due to prolapse of the cord, and one patient became morbid, owing to mastitis. The results were that 97 per cent. of cases derived benefit. Rectal ether appeared to be 30 per cent. more efficient than "twilight sleep," and was without danger to the infant. Two per cent. of patients treated were unaware of any pain from the first injection of morphine and mag. sulph., and this method of relieving pain during a long period was undoubtedly far in advance of any other means in use at the present day.

Dr. G. E. P. MELDON said that he regarded rectal ether as an extremely satisfactory anæsthetic, but had found that in patients who came into hospital early on the morning of operation, or on the previous evening, it was not so successful. He thought the reason for this was that the bowels were not properly cleared out. As a routine, he put a catheter into the rectum, gave the injection, and left the catheter in. He had never seen any rectal trouble follow the injections.

Dr. D. G. MADILL pointed out that Beckenham said there was no synergism between magnesium sulphate and morphine, whereas Gwathmey said there was.

Dr. T. M. HEALY said that when Gwathmey's paper on anæsthesia in labour first appeared in 1923, some cases had been treated in this manner at the Coombe Hospital according to Gwathmey's technique. The results obtained were somewhat disappointing. Since the stronger solutions of magnesium sulphate had been introduced in 1924, however, he (Dr. Healy) had been more satisfied with the results obtained. Some patients had scopolamine-morphine anæsthesia in one labour, and Gwathmey anæsthesia in another, and seemed to think that the quinine was the less nauseating. Magnesium sulphate was now always given intramuscularly, though this was not done when the method was first started. He had seen no cases of difficulty in the third stage of labour, and no difference in the stillbirth-rate since this method of anæsthesia had been used. He regarded it as a good method, but said that quite a large number of patients objected to rectal instillations.

Dr. D. V. MORRIS said he had been using Gwathmey anæsthesia for some time, and in private practice regarded it as very successful. He personally was content if he got analgesia.

Dr. F. W. DOYLE said he had never tried Gwathmey anæsthesia, but it seemed to him that in using it a tremendous number of different drugs were being introduced into the patient. He felt that at present it was a rather tentative method. In some cases he believed the patients developed very severe colitis as a result of irritation by the ether. He thought that in many cases ether was a bad anæsthetic to employ. He preferred gas and oxygen, preceded by twilight sleep.

Dr. R. W. SHAW said he had never used Gwathmey anæsthesia in obstetrical cases, but had used it in other cases. The technique was rather complicated, and it took a long time to produce anæthesia. He thought that avertin anæsthesia had more possibilities than Gwathmey anæsthesia. In a recent case of his own the patient had complained of great pain when ether and oil was injected.

Dr. BETHEL SOLOMONS said that when he had suggested to Dr. Browne that he should study the Gwathmey method of anæsthesia in labour, he was anxious to find out if it could be of general use, not only to the specialist but to the general practitioner. Dr. Browne had demonstrated certain very definite points, even though the number of cases was small. It was extremely difficult for the assistants at the Rotunda to devote a great deal of time to such cases. The routine work was heavy, and the isolation wards, necessary for such an investigation, were not always available. He had shown the results in 41 cases, and as there were approximately 6000 confinements in the hospital in the time under review, it seemed to show that the method was not one for the busy general practitioner. In fact, in spite of the excellent work of Gwathmey and his disciples, Dr. Solomons did not see that this method would be any more universal than twilight sleep. Both had disadvantages and advantages. He believed that the ideal anæsthesia was gas and oxygen, but where this was not available, ether was the safest. It had been proved that quinine given according to Gwathmey was not dangerous for the child, and he had seen no danger to the child in the oil-quinine method for inducing labour.

Dr. A. H. DAVIDSON said that Dr. Browne's conclusions seemed to bury the quinine bogy. He had never seen a case in which quinine had done any harm to the baby.

Dr. SOLOMONS described some preliminary investigations on the value of the Fouchet test in the toxæmias of pregnancy, Dr. HEALY showed specimens from a case of abdominal pregnancy, and Dr. D. CANNON read notes on a case of Erb's paralysis.

REVIEWS AND NOTICES OF BOOKS

Le choc anaphylactique
et le principe de la désensibilisation.

By A. BESREDKA, Professeur à l'Institut Pasteur. Paris: Masson et Cie. 1930. Pp. 276. Fr.30.

IT is now many years since this author produced a short but excellent personal monograph upon anaphylaxis which was translated into English. The present volume is, to some extent, a repetition of the former work, giving an up-to-date résumé of the history, facts, and theories of anaphylaxis. Like its predecessor it is well worthy of translation. The subjects dealt with include the historical aspects of anaphylaxis; protein sensitisation; anaphylactic shock; the question of sensitisation by other substances, bacterial anaphylaxis, serum sickness; and the conditions which loosely revolve about the orbit of classical anaphylaxis and are variously referred to as atopy and allergy (Besredka does not use these terms). The prevention of shock and methods of desensitisation are very thoroughly dealt with, both with respect to serum administration and the question of the treatment by desensitisation of food idiosyncrasies and other clinical examples of hypersensitivity. The book closes with a discussion of the various theories of anaphylaxis. The author has a good deal to say about the Friedberger-Bordet anaphylotoxin theories; most of it damaging. His review of the many hypotheses which have been put forward is, on the whole, a fair and careful one. It is not unnatural that many of his own views should be dominated by his results with cerebral anaphylaxis—a subject practically untouched in this country—upon which little work seems to have been done anywhere except in Besredka's laboratories. It is a matter which we should like to see further investigated by another school of workers, since so much of the edifice of argument erected here depends upon the detailed confirmation of the author's work in this particular field. Besredka's own theory of the causation of anaphylaxis is summarised in the following words. Speaking of the assumed interaction of antigen and antibody, he says: "their affinity has the effect of setting up an instant reaction; whether this reaction disrupts the equilibrium of certain nerve cells in the vicinity of which the combination takes place, or whether this latter is accompanied by the setting free or absorption of calorific or other form of energy, we are faced with a constant and unvarying series of phenomena which constitute anaphylactic shock." Apart from an expression of opinion that the nervous system probably plays a leading part in the production of shock, this does not seem a very lucid contribution to the explanation of these difficult phenomena. The book, is, however, well worth reading by those who are interested in anaphylaxis. It can hardly fail to stimulate questions and to suggest further lines of thought. There is no index, but adequate summaries of the contents of each chapter are supplied.

Early Theories of Sexual Generation.

By F. J. COLE, D.Sc., F.R.S. Oxford: Clarendon Press. 1930. With 22 illustrations. Pp. 230. 15*s*.

IT is only since about the middle of the nineteenth century that it has been agreed that the essential fact of sexual reproduction is the union of egg with spermatozoön, and the development of the new individual from the cell so formed. The essential male and female elements were identified in the seventeenth century when microscopes became available, and their relative share in reproduction was for long a matter of doctrinal dispute. Most people held that the growth and differentiation of the embryo consisted in a simple unfolding and expansion of what was there already, and, convinced of the fact of preformation, observers drew on their imaginations and saw homunculi either in eggs or spermatozoa according to their fancy. The greater part of Prof. Cole's account is concerned with the various phases which this preformation doctrine went through till it wilted away under its own absurdities and the realisation that Aristotle's epigenetic notions were probably right after all. But it was worth treating in detail with all the wealth of learning and scholarship which Prof. Cole brings to the task, partly for its own sake, and partly because in recent times the gene theory of inheritance has afforded a possible line of reconciliation between it and epigenesis. It is certainly not true that a spermatozoön if sufficiently magnified has the appearance of a respectable citizen; it may be true that the chromosomes consist of definite particles each one of which is concerned in developing a part of the adult body. The tale therefore is not wholly dead, and for the author's way of telling it we must all be grateful. Mr. Clifford Dobell contributes the first English translation of Leeuwenhoek's letter of 1677 to the Royal Society announcing the discovery of spermatozoa; the list of references runs to 17 pages.

Tropical Medicine in the United States.

By ALFRED C. REED, M.D., Professor of Tropical Medicine, Pacific Institute of Tropical Medicine within the George Williams Hooper Foundation for Medical Research of the University of California. London: J. B. Lippincott Company. 1930. Pp. 410. 25*s*.

IN the United States many tropical diseases are endemic and assume a serious character, for example, hookworm infection, malaria, amœbiasis, bacillary dysentery, sprue, pellagra, and plague; others, such as undulant fever, have a sporadic distribution, while oriental sore, trematode infections, leprosy, and filariasis are constantly being imported by foreigners. For the practitioner working in America, therefore, tropical diseases have more than a passing interest and so it is essential for him to possess a short practical clinical guide to their diagnosis and treatment. It is from this point of view that the present volume has been written. Certain typical tropical diseases, such as African trypanosomiasis, are not dealt with at all, while detailed parasitology is omitted. The descriptions are for the most part clear and intelligible, and the author has been wise in avoiding too much detail in regard to ætiology and diagnosis, but in handling of the all-important section of treatment his methods are less successful, for the accounts are too meagre to be useful. We note also a lack of healthy scepticism in certain respects. For example, diseases such as bronchial spirochætosis and bronchomycosis, whose very existence is doubted by some authorities, are described as if they were as important as well-recognised entities like yellow fever and rat-bite fever. The illustrations are mostly photographs and are not very satisfactory.

Les phénomenès de choc dans l'urticaire.

A Clinical and Therapeutic Study. By PASTEUR VALLERY-RADOT and LUCIEN ROUQUES. Paris: Masson et Cie. 1930. Pp. 232. Fr.35.

Pasteur Vallery-Radot is a worthy successor to the great French workers Bordet, Abrami, and Widal in the field of serology, and this book most ably summarises the published work on the phenomena of shock in urticaria. The subject is of outstanding importance, not only in dermatology, but in its broader aspects, which include the problem of asthma, and the intricate interactions of the sympathetic nervous system and the endocrine glands. We are only at the fringe of the therapeutic possibilities that may yet ensue, and the profession will do well to avail themselves of this opportunity for a realisation of the facts so far established.

The contents are divided into two parts. In the first, a clinical part, are discussed in detail the meaning of anaphylaxis, colloidoclasia, and the humoral changes that precede and accompany the urticarial attack. The various causes of urticaria are explained in the seven succeeding chapters. They include alimentary, medicinary or drug urticaria, parasitic urticaria, and that due to emotion, effort, heat, and cold. The second part of the book is devoted entirely to treatment and occupies 75 pages. The condition is sometimes intractable, and the reader of this book will be grateful for the many and varied remedies set out. The bibliography cited is immense, and the mere tabulation of the authors' names take four and a half pages of small print. The work is really valuable.

Antenatal Care.

Second edition. By W. F. T. HAULTAIN, M.B., and E. CHALMERS FAHMY, M.B., Assistant Physicians, Royal Maternity Hospital; and Assistant Gynæcologists, Edinburgh Royal Infirmary. Edinburgh: E. and S. Livingstone. 1931. Pp. 127. 5*s*.

So well has this book fulfilled its purpose that within two years of its first appearance its authors have been given the opportunity of revising and rearranging its contents in a new edition. Short chapters on Maternity and National Health benefits and on postnatal care, together with a brief description of the Aschheim-Zondek test for pregnancy, have been added, but otherwise the text remains as before, even to "aequous solution" on page 110. The chapter on postnatal care discusses most of the common troubles following confinement, and, so far as it goes, will be useful to clinic workers, but is too slight to take them far. Its practical value would have been greatly increased if, for instance, some details had been given as to the nature of the remedial exercises recommended for backache. The chapter of a page and a half on insurance benefits is excellent and might well have been extended to include other forms of public assistance for the childbearing woman.

Our real regret is that its authors have not seen fit to make their book cover the wider aspects implied in antenatal care and still restrict their view to its purely medical side. True, the decision of what

should or should not be included in a small manual of this size is undoubtedly a problem. And the subject is an integral part of midwifery and in so intimate a relation with its whole practice that it is difficult to determine those portions that can be separated out as being, to use the authors' words in the preface to the second edition, within "the province of the title of the book." But one matter, clearly within its province, and indeed essential to an adequate presentation of its title, is that it should give a proper perspective of all that is comprised in antenatal supervision, and that cannot be done if the social and educational aspects are left out of the picture. Drs. Haultain and Fahmy have written from the standpoint of the obstetric specialist and from that of the hospital or consultative clinic. Thus they have devoted several pages to the intranatal and curative treatment of developed eclampsia, placenta prævia, and other conditions that belong rather to the labour ward than to the antenatal clinic and ward. If an authoritative ruling on this matter is required, reference may be made to Memo. 156/M.C.W., recently issued by the Ministry of Health, where there is a ministerial pronouncement that the antenatal clinic has a two-fold function: (*a*) medical and nursing, and (*b*) educational and social. We make this suggestion because it is probable that another edition will soon be called for; the teaching in the book is otherwise sound, and it seems unfortunate that it should represent but a one-sided view of antenatal care.

The Materials of Life: A Simple Presentation of the Science of Biochemistry.

By T. R. PARSONS, M.A., B.Sc. London: G. Routledge and Sons, Ltd. 1930. Pp. 288. 10*s*. 6*d*.

Mr. Parsons has attempted a difficult task. He aims, as he says, "to give an account that everybody shall be able to understand of the materials of which living things are made, and of the complex but fascinating changes that these materials undergo during life." He has succeeded but moderately well. We can imagine very few laymen who would work their way through such a detailed narrative. The serious student, on the other hand, will need something more solid. The book might be useful to medical men whose physiology is long out of date, though they must not expect to find anything about stomach-ache in the chapter headed "Digestion and Indigestion" which is simply an account of the normal process. As one would expect from the author, the information given is accurate and up to date, though there is a first-rate howler on page 100 where bread and butter is called a protein-free diet.

Pleasure and Instinct.

By A. H. BOULTON ALLEN. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1930. Pp. 336. 12*s*. 6*d*.

THIS volume bears a title which does not do it full justice. It contains a careful and thoughtful analysis of the major instincts—reproduction, curiosity, gregariousness, and the impulse to power. All the outstanding theories of pleasure-pain are described and discussed, and the relationship of the psychology of feeling to sensation and instinct is argued with considerable skill, and much illumination of an obscure subject is the result. In so far as any discussion on feeling is incomplete without a consideration of the nature of æsthetics and values, these somewhat philosophical subjects are dealt with also in an up-to-date and succinct manner. From the point of view of psychological medicine, the chapters on instincts and their relationship to feeling will reward reading and study.

The Formenkreis Theory
and the Progress of the Organic World.

By O. KLEINSCHMIDT. Translated by F. C. R. JOURDAIN. London: Witherby. 1930. Pp. 192. 10*s*. 6*d*.

THIS book ought not, we feel, to have been translated without clarification and condensation. It is a confused statement of the author's belief that "real species" of animals date much further back in evolution than has been supposed, though it is not clear whether he is prepared to go the length of multicentric origins. There are many querulous complaints that everyone does not agree with him.

NEW INVENTIONS

A SIMPLE FACE-MASK FOR ACCOUCHEURS.

THE belief that many cases of puerperal sepsis result, either directly or indirectly, from infection from the throats and noses of those who are in attendance upon the cases and who are "carriers" of virulent organisms has been growing in strength during the last few years. Therefore it has become necessary that some efficient means should be devised for protection from droplet infection. A good maternity mask should conform to the following requirements: (*a*) it should be cheap; (*b*) comfortable to wear; (*c*) it must be efficient to prevent the passage of organisms through it; and (*d*) it should be easy to sterilise.

The mask here illustrated has been submitted to Dr. Leonard Colebrook, of the Inoculation Department of St. Mary's Hospital, to Prof. Miles Phillips, of Sheffield, and to Prof. Beckwith Whitehouse, of Birmingham, and on their advice and criticism it is submitted for general trial. The mask consists of a piece of jaconet attached to a strip of flexible aluminium, to the ends of which tapes are attached, which are tied round the back of the head. The strip is moulded by the wearer to the shape of his nose and face. To the lower side of the jaconet is attached a light, open, metal neck-spring, which serves to prevent the mask from flapping forward when the wearer bends forward. The mask can be sterilised by simple washing in a strong antiseptic solution. It is germ proof, does not fog the glasses, can be worn in any place, and is reasonably comfortable to wear. The price is modest.

Messrs. Down Bros. Ltd., St. Thomas's-street, S.E., are the manufacturers.

HOWARD E. COLLIER, M.B., Ch.B. Edin.

THE LANCET.

LONDON: SATURDAY, MARCH 21, 1931.

DOCTORS AND MILITARY SERVICE.

In the House of Commons last week, in Committee of Supply on the Army estimates, Dr. F. E. FREMANTLE made a statement upon the shortage of medical officers in the Army which deserves close attention, all the more because he did not confine himself to lamenting a position which is known by everybody to exist, but went on to make constructive proposals. For these he hoped to get the endorsement of the War Ministry, and the actual figures which he adduced were striking enough to warrant that expectation. It seems that an establishment of 823 is now 173 short, or, roughly, 20 per cent. Upon certain of the reasons for this ominous plight of the Service there is no doubt, and it is obvious that they will continue to work with increasing effect unless they are arrested. The forces abroad must have their quotas kept up, therefore the present officers of the R.A.M.C. are perpetually on foreign service, and thus are largely prevented from marriage or from entering into any social ties which they might desire to make. Consequently, and at the earliest opportunity, many seek retirement and, as this occurs chiefly among the juniors, while it aggravates the shortage it produces a want of balance in the Service. Next in importance to the conditions of the life comes the scale of pay. It is not such as to invite recruitment and act as a counterpoise to the disinclination which may be felt towards entrance upon a disciplined career, which must always have its objections in a profession where the best expressions are often individual in character. On the matter of pay Colonel FREMANTLE reminded the House of Commons, as that House and the public have been reminded over and over again, that the claim of the medical officer to be especially considered in any of the military Services in the matter of remuneration has this firm foundation—the entrant has pursued for a period of at least six years a difficult educational course at his own expense before the country begins to pay him anything. In France the young doctor becomes a military officer for the last three years of his training.

The state of affairs, once again brought prominently before the public attention, cannot be remedied easily, but this is no reason why immediate attempts should not be set in hand to remedy it. The position is growing worse and worse, and although the R.A.M.C. is brought up here as a text analogy can be found in the position of the medical officers in the Royal Navy and the Royal Air Force. The figures have not been made public so clearly, and exactly what the needs of the Navy are, for example, is not apparent, but the decline in disease among those employed overseas, which was marked a few years ago, is not being maintained, and the assumption that these things are in relation is legitimate. That commissions in the Navy should still prove unattractive is puzzling, for undoubtedly there is much to encourage the right type of medical man to join the Service. There are many specialist appointments for the naval medical officer. Good opportunities, we believe, whenever the exigencies of the Service will permit, are given for post-graduate study leading to the higher qualifications; and if the pay is not high the cost of living in the Navy is low. Nonetheless a considerable degree of shortage is known to exist, and the fact is pertinent to Colonel FREMANTLE's scheme of remedy—namely, a combination of the medical officers of the Navy, Army, and Air Force into one Service. This is a variation from the old proposal of fusion of the R.A.M.C. with the splendid Indian Medical Service, which of course is no longer practicable; but the place of the I.M.S. Colonel FREMANTLE thought might be taken by the Colonial Medical Service, and the whole combination be reinforced by entering into relationship with the medical officers of the Home Civil Service. The main advantage of such a consolidated union would be the wider sphere of professional prospects, so that a far larger number of young medical men would fall under its appeal. It is easy to see that under such a union the inequalities of foreign service might be adjusted with greater facility, while certain money subventions from the State would automatically accrue to it. Statements that there must be a formidable amount of reorganisation before such a union is feasible will not be regarded as a sufficient reply; and none of Colonel FREMANTLE's words made a more forcible appeal to the House than those in which he pointed out that the scandals and tragedies associated with the South African war, largely due to a shortage of medical officers in the Army, might occur again.

As the shortage of officers in the R.A.M.C. has recently been confessed in a White Paper issued by his own Department, the Minister of War had no embarrassment in acknowledging that Colonel FREMANTLE's picture of the situation was unexaggerated, but he took the view that the disadvantages of the career of the R.A.M.C. officer, as detailed to the House, might not account in a capital manner for the shortage which all deplored. He found in the fact that the openings under the National Insurance Acts were well paid an inducement to many young medical men, who previously had been recruited for the Army or Navy, to remain in civilian practice. That has been said often and it is true. But it must not be used as a plea for inaction but rather as a spur to rivalry. Referring to the hope of any drastic reform that depended upon a large scheme of fusion the Minister demurred at expressing any view upon this "at a moment's notice." Here he was taking the course that many of his predecessors have taken, to the despair of many Medical Directors. Of course a big scheme cannot be debated with precipitancy—

the bigger the scheme the more is this obvious; but the determination to concert measures to meet a national peril can be taken at a moment's notice, and it is sincerely to be hoped that this is the frame of mind in which the Minister for War finds himself. The duties of England to a far-flung Empire, the responsibilities of the nation to the young men who serve her, the call of science for workers in all spheres—any and all of these are irrefutable pleas for the proper manning of these Services. Everyone knows these things. Cannot our rulers begin to face the administrative difficulties needed to obtain the necessary medical recruits?

THE TREATMENT OF ECZEMA.

THE international congress at Copenhagen, last year, made it clear that the treatment of eczema has not kept pace with new knowledge of the ætiology of this puzzling and refractory disease. But if we have no strikingly successful therapeutic novelties the present outlook on the causation has shown that the remedies of four decades rest on a sure foundation, the nature of which has been partly revealed. Writing in retrospect, J. DANIER and A. TZANCK,[1] of Paris, point out that eczema must no longer be regarded as a toxiderma or an auto-intoxication. It is now "a reaction of intolerance by the skin," and if the term "reaction" is accepted and sustained as a premise, then we must also say that an agent sets the reaction going, that the subject or organism is susceptible or sensible to the agent, and that there is a latent mechanism of sensibility, either inborn or acquired. We are then in a position to attack either: (*a*) the reaction itself (the actual lesions) by local treatment; (*b*) the agent (antigen) by suppressing it; (*c*) the reacting factors of the organism (*reagines*) by inactivating them, by protein shock medication; (*d*) the mechanism of the reaction, by desensitisation; or (*e*) the susceptibility, by prophylaxis. No one will question the desirability of adopting the first procedure in almost every case; it is very necessary to soothe and by every means allay the local disturbance, and often the results are highly satisfactory and equivalent to cure. To ascertain the cause, however, is very often difficult. It is usually evident only in cases of dermatitis due to trade or profession, and even if it is discovered it cannot always be excluded entirely from the environment or the food. In such cases the object must be to make the patient capable of normal resistance—i.e., to desensitise him either by protein shock, in which we presume to disorganise the reaction itself, by desensitisation in a specific sense, or by general preventive treatment which includes elimination of focal sepsis, autotoxæmia, hyperglycæmia, and the like.

Rest is as important in the treatment of eczema as in other diseases, and a second item is the clearance of surface contamination or crusting by moist compresses, containing bland or slightly antiseptic solutions, such as Alibour's fluid (½ per cent. copper and zinc sulphate). This accomplished we may continue with creams containing water in relatively large proportion to their fatty content and to pastes or glycerin of starch with carbonate of magnesia and talc. The details of local treatment have to be varied in almost every case, and if the diagnosis is at fault, and such conditions as epidermophytosis or seborrhœa are ignored or missed, success can scarcely be expected. Of modern substitutes for topical applications, the only one which has proved consistently useful is X ray treatment, but this should be reserved for the type of case that will respond and not be applied without discrimination. Suppression of the cause of an eczematous eruption is an ideal seldom attained, and as DARIER and TZANCK remark, "is not its attainment an acknowledgment of defeat?" To forbid a baker or a polisher to continue at his trade cannot be regarded as a therapeutic triumph, even if it relieves him of his symptoms. In this connexion, too, the possibility of a parasitic or mycotic ætiology must always be kept in mind, and here the regions affected will sometimes provide a valuable clue; but great caution should be used in making a diagnosis of yeast or monilia infection, for these organisms are common saprophytes.

The great majority of eczema cases fall into one or other of the ætiological categories mentioned, and much rarer are those depending on a vascular (endogenous) antigen. The only really clear-cut examples of these are the infantile eczemata which not infrequently clear up when the infant is removed from the breast and dieted on controlled foods. Nowadays it is thought important to recognise a susceptibility in early infancy, for neglect to do so exposes the patient to a risk of so-called polyvalent response in later years, and makes elucidation of the cause increasingly difficult. Desensitisation may be attempted with the actual antigen—e.g., egg or wheat protein—in minute increasing doses at stated intervals either intradermally, subcutaneously, or per os. The technique is somewhat complex, the results are by no means always constant or permanent, and serious reactions have been encountered from time to time. The non-specific protein shock methods aim at disengaging the presumed mechanisms of interaction (antigen-antibody) by introducing a foreign protein. By frequently repeating their introduction one exhausts the stock of *reagines*, and the resultant eczematous attacks along with them. The agents available in this connexion vary from the mild but often successful autohæmotherapy (whole blood intramuscular injections) to intravenous injections of a typhoid vaccine which has been employed in this country especially in the treatment of chronic urticaria. A simple and harmless method of this kind is the administration of peptone by the mouth before meals, but it is likely to be useful only where the provoking antigen is a protein of animal origin. On the whole, experience suggests that the safest and most generally successful of shock methods is autohæmotherapy.

The nervous system undoubtedly plays a part in the genesis of certain types of eczema, and much has been written in recent years on the importance

[1] Presse Méd., Jan. 17th, p. 73.

of sympathetic and parasympathetic influences. To what extent these factors are primary is uncertain, but in vagotonic cases improvement of the symptoms can sometimes be demonstrated after administration of atropine or belladonna, while the sympatheticotonic respond to ergotamine or stimulation of the vagus action by pilocarpine, which is frequently prescribed on the continent. Where the nervous element predominates bromides are useful, and are best given by the intravenous route as 10 per cent. sodium bromide, or in the well-known proprietary preparations. Occasionally brilliant results are obtained by administration of endocrine extracts, but until biochemical methods of investigation are standardised the effects will remain inconstant. An empirical remedy much favoured by dermatologists at the present time is sodium thiosulphate. It is given in doses of 0·45 to 0·75 g. by the intravenous route, and the dose can be repeated daily without danger for weeks at a time. DARIER and TZANCK summarise their advice under the following headings: (1) soothing and protective local treatment in all acute cases; (2) determined attempts to elucidate the cause, remembering that it may be chemical, physical, traumatic, parasitic, or microbial; (3) treatment, ad hoc, when the cause is proved; (4) elimination of focal sepsis; (5) suppression of preventable causes, as in trade or alimentary cases; (6) investigation of vagosympathetic and endocrine faults and deficiencies; (7) recognition of acquired or hereditary dyscrasias and substrata, such as congenital syphilis or chronic infections; (8) attempt to desensitise the patient by accustoming him to the specific antigen, or by non-specific shock methods.

"KINETIC" TREATMENT OF THE EYES.

WHAT is to be done when symptoms of eyestrain persist in a patient after all errors of refraction and of muscular balance have been efficiently corrected by appropriate glasses? An answer to this question is propounded by Mr. N. A. STUTTERHEIM [1] who maintains that a not infrequent cause of eyestrain is a defect in the amplitude of convergence and that this is in a large proportion of cases curable by appropriate exercises with prisms. He distinguishes between voluntary convergence and what he calls involuntary convergence. The former is measured by the perpendicular distance from the base line between the two eyes at which they are able to fix a point without diverging, and the latter is measured by the strength of prism which can be tolerated when both eyes are fixing a distant point, without diplopia being produced. The range of convergence is the sum of the two strongest prisms which can be tolerated, the one tending to cause divergence, the other convergence. This sum, for most people, is represented by a prism with a principal angle of somewhere about 20° but is capable of being increased by practice to 50° or over.

Mr. STUTTERHEIM, in a systematic investigation of his patients, found it generally true that the range of involuntary convergence in those with symptoms of eyestrain was on the whole much less than in those without such symptoms; that training with prisms invariably increased the range, and that in those sufferers from symptoms of eyestrain who had a small range the results were invariably good. The actual exercises must be controlled by the surgeon or some skilled person. First the prisms base in, and then the prisms base out are placed before the patient's eyes and rapidly changed until diplopia ensues, the process being repeated three or four times and the number of the highest prisms tolerated noted for use first at the next sitting. The same process is repeated daily for as many as 40 days for some patients. Generally 12 days of "kinetic" treatment are found to be sufficient to overcome insufficiency of involuntary convergence. It is claimed that as the function is restored headaches, tiredness during work, and other depressing sensations disappear, and that the improvement to binocular eyesight is often remarkable.

What is the theoretical justification of this procedure? In the higher vertebrates lessening of the divergence of the optic axes goes together with a gradually increasing bilateral representation of the retina in the brain. In man the semi-decussation of the optic nerves is complete, the efferent neuromuscular condition of this high development being the involuntary convergence of the foveæ of the two eyes on an identical spot. This is a late development phylogenetically and therefore is not such a well-established reflex act as for instance the older reflex of accommodation. To work smoothly and with the necessary exactitude it is necessary to have a large reserve of converging power; otherwise the demands on the nervous system are not easily met and "eyestrain" may ensue. What appears new in Mr. STUTTERHEIM's theory is the assumption that to secure accuracy of binocular fixation at any distance, and not only for near work, a large reserve power of convergence is essential. Long ago LANDOLT in discussing insufficiency of convergence put the necessary amount of reserve power as twice the amount of what is habitually required for near work—i.e., anyone habitually working at a distance of 12 cm. needs, for comfort, to be able to converge to a point distant 4 cm. from his eyes, and it is customary to instruct patients who display such insufficiency to exercise their convergence by simple practices at home. In exceptional cases prisms may be prescribed, either base out for temporary wear in order to exercise the muscles, or base in in order to relieve them. Graduated exercises carried out in the consultation room have also been used by some surgeons and it is to this that Mr. STUTTERHEIM returns, not merely with the object of increasing the converging power for near fixation but for promoting the ease of fixation at any distance. There is one precaution which might be taken as a preliminary measure by those who propose to try this treatment. If the symptoms of eyestrain of which the patient complains are really due to this cause, he ought to be relieved by putting one eye

[1] Indications for the Kinetic Treatment of the Eyes, Brit. Jour. of Ophthalmology, Monograph Supplement V., 1931.

out of action temporarily by means of some such device as a chavasse glass. If the symptoms persist they cannot be due to difficulties of focusing in connexion with binocular vision. It must also be remembered that a not uncommon cause of eyestrain in patients whose refraction has been efficiently corrected is hyperphoria, either from a want of balance in the vertically acting muscles of the two eyes or from a bending of the frames of the glasses that the patient is wearing. It must be admitted that Mr. STUTTERHEIM's theory is unproven; if, however, the practice which is based on it succeeds in relieving distressing symptoms curable in no other way, its author will have made an important contribution to the therapeutics of the eye. In a table recording the results of 100 cases treated in this way the good results are certainly striking. If other ophthalmologists have similar success the treatment will become established.

ANNOTATIONS

THE ROYAL SOCIETY.

THE list of candidates recommended by the Council of the Royal Society for election to the Society is noteworthy for the recognition of scientific medical work in surgery and in public health and epidemiology. Mr. Wilfred Trotter needs no introduction to our readers, to whom his election will be specially welcome. Sir Alexander Houston, M.B., director of water examination to the Metropolitan Water Board, who might pardonably have deflected his whole energy into administrative channels, has used his opportunities to advance the chemical and biological control of water-supplies throughout the world. Lieut.-Colonel S. P. James, I.M.S., adviser on tropical diseases to the Ministry of Health, has made a series of investigations on the principles of malariology which, through the League of Nations' Commission on Malaria, have born fruit in the malarious districts of Europe as well as in the colonies. Prof. A. J. Clark, who was a worthy successor to Cushny in the chair of pharmacology in the University of Edinburgh, has worked especially on isolated organs and on the comparative physiology of the heart. Pathology is not represented in this year's list, but pathological chemistry is honoured in the person of Dr. C. R. Harington, whose name is associated with the synthesis of thyroxin. Among the exponents of sciences ancillary to medicine we note the names of Prof. C. S. Gibson, who holds a London University chair of chemistry at Guy's Hospital, Mr. I. M. Heilbron, D.Sc., professor of organic chemistry at Liverpool, and Mr. R. Ruggles Gates, Ph.D., professor of botany at King's College, University of London. To all those selected for this distinction we offer cordial congratulations.

ERYTHEMA INFECTIOSUM.

AN epidemic of the acute exanthem variously known as fifth disease, megalerythema epidemicum, or (more frequently) erythema infectiosum, occurred in Branford, Connecticut, between November, 1929, and February, 1930, and is described by A. L. Lawton and R. E. Smith.[1] The condition has received a good deal of attention in Germany, but only a few epidemics have been reported in America, and apparently none in this country where, as J. D. Rolleston[2] points out, sporadic cases are occasionally seen corresponding in their clinical features to the description of the epidemic disease. The most characteristic feature of erythema infectiosum is the eruption, which may be the first and only symptom, though there is sometimes a prodromal period with slight malaise and sore-throat. The rash appears first on the face where the cheeks are mainly affected by a confluent eruption resembling erysipelas, separated from the normal skin by a well-defined slightly raised edge. Discrete spots may also be found on the forehead and chin, but the nasolabial region is not involved. The rash appears about the second day on the body and extremities, being most marked on the extensor surfaces where it assumes a gyrate form. The face and limbs are always more affected than the trunk. The rash soon fades on the face and trunk, but may last 6–10 days on the extremities. There is no subsequent pigmentation or desquamation. There are no constitutional symptoms, the lymphatic glands are not enlarged, and the urine is normal. The tongue may be a little furred and the temperature slightly raised, but there are no complications or sequelæ. In the Branford epidemic of 97 cases 54 were females and 43 males. The youngest patient was aged 8 months and the oldest 45 years, but the overwhelming majority (88) were between 4 and 12 years of age. The disease in each case was typical as regards the appearance, distribution, and duration of the rash, and the character of the other symptoms. Of 68 families in the series with two or more children, 17 had more than one case. In one family with six children all were affected. Eighty-five cases were in school-children, and of the seven schools represented one supplied 45 cases. Nasopharyngeal washings from two cases, one on the first day of the rash, and the other on the eighth, were inoculated into the peritoneal cavity and testes of rabbits and also on the scarified cornea. The results were all negative.

[1] Arch. Int. Med., January, 1931, p. 28.
[2] Acute Infectious Diseases, 2nd ed., 1929, p. 343.

DIET AND THE TEETH.

THE results of extensive research into the effects of diet on the formation and life of the teeth, on which Mrs. May Mellanby has long been engaged, are being published in three parts by the Medical Research Council. The first part dealt with dogs, the last part will deal with man, and the intermediate part just issued[1] contains accounts of a number of experiments on periodontal changes in response to diet in dogs, and on dental caries in connexion with the nutrition of dogs, rabbits, rats, and monkeys. The second section of this intermediate part deals with the structure of the teeth of whales, horses and other animals, and with factors influencing calcification in the jaws of rabbits and rats. Mrs. Mellanby has apparently succeeded in producing or preventing periodontal disease, including pyorrhœa, in dogs, and her work opens up a promising line for therapeutics in man. A deficiency of vitamin A in the diet leads to hyperplasia of the subgingival epithelium, with the result that it is invaded by pathogenic organisms.

[1] Medical Research Council, Special Report Series No. 153. H.M. Stationery Office. 1930. Pp. 94. 2s. 6d.

Deficiency of vitamin D, on the other hand, is followed by defects in the alveolar bone. Once again the vital importance of diet in the early months of life has been demonstrated, for if a puppy's diet has been deficient in the two vitamins the dog may develop periodontal disease later, however perfect his adult diet, while the badly fed dog is partly or wholly protected if he has had an ample supply of the vitamins in his puppy days. The attempt to produce caries in dogs under experimental conditions has met with many difficulties and very little success, but the negative results are interesting. Even large quantities of glucose do not produce dental decay in dogs, nor does the presence of *Streptococcus mutans* and *Bacillus acidophilus*, which are supposed to cause caries in man. More promising results have been obtained with rabbits, for their exposed dentinal tubules are often invaded by bacteria. There seems, however, to be less tendency to invasion when fat-soluble vitamins are abundant in the diet.

Another factor that appears to depend on vitamin D is the response of a tooth to attrition. When the surface-enamel is destroyed the osteoblasts of the pulp become active, and secondary dentine tubules are formed. When the diet contains plenty of vitamin D much well-calcified secondary dentine is produced, but a cereal diet containing little vitamin causes production of poorly calcified secondary dentine or none at all. The response is independent of the structure of the primary dentine in the teeth. These results will be related to human problems in Part III. of the report, for dental caries is another stimulus to the production of secondary dentine.

Calcification of the teeth in rats and rabbits depends on vitamin D just as much as it does in the dog, and these three mammals offer such different types of teeth that it seems highly probable that the calcification of all mammalian teeth is controlled in the same way. With an abundance of vitamin D in the diet—whether obtained by natural foods or by the irradiation of ergosterol-containing substances—the teeth are properly formed. With a deficiency of vitamin D the calcium-phosphorus ratio becomes a significant factor. Irradiation greatly improves calcification when the diet is poor in calcifying properties.

Mrs. Mellanby's patient and careful research is of great interest. The publication of the third part, which will deal more directly with medical and dental problems, will be welcome because her complete findings to date will then be available in compact form, and their implications discussed.

INDUSTRIAL PSYCHOLOGY.

THE tenth annual report [1] of the National Institute of Industrial Psychology shows that, despite trade depression, the work is going from strength to strength. More and more firms are asking the help of the Institute in the elucidation of the human factor in industry. A new scheme of personnel selection has been devised for smaller employers of labour and a confidential written statement is sent to the firm after a short examination of the applicant. The report gives a brief summary of the various investigations that have been carried out during the year. In one chocolate factory, for instance, improved methods of packing have been devised, while another chocolate company submitted the problem of unsatisfactory sales of one of their most important products. The Institute investigated the publicity methods employed and their report was followed by a great improvement in the sales. In an engineering works the Institute drew up a detailed plan to increase the control of production. Many citizens will be glad to hear that it has had under its fatherly care some of the labours of the General Post Office. In the tongue-packing department of a potted meat factory the Institute's improvements will produce a saving of over £5000 a year. Alterations to the lay-out of the work bench in a rubber factory will enable the workers to increase their earnings from 20–30 per cent. In addition to these and many other practical services to industry, experiments in vocational guidance have been carried out; the full report of the London experiment will be published shortly. A series of occupational analyses is being made for the help of the vocational guidance section and the investigator is starting on secretarial work, drawing up letters and questionaires to discover the duties of the work and the qualities necessary for success.

The Institute also carries out an extensive lecture programme and a great deal of research. Among the matters investigated during the year are factory assembly operations, colour discrimination, daily fluctuations of industrial efficiency, and tests for perseveration. Such incentives as pay-day and the making-up of the worker's output for the week seem to have a strong influence on the worker's efficiency. The effect of the monthly period seems to be variable; in general the output is unimpaired, but in some it is higher and in some lower than at other times. Some factories regard menstruation as a grave problem, while others take the opposite view. Dr. W. J. Pinard's work on perseveration suggests a basis of division into three types. The moderate perseverators and the moderate non-perseverators form a stable, reliable group who, in particular, have most of the qualities included in "leadership." Both extreme perseverators and extreme non-perseverators prove to be unstable and "difficult," but while the former are rebellious, "nervous," sensitive, and effeminate, the latter are irritable, suspicious, critical, and inconsiderate. Mrs. M. Milner has begun a research on methods of diagnosing social ability, especially the ability to "handle people." She has distinguished two aspects: strength of personality and social judgment; and two main lines of attack: the distinction between explicit rational thinkers and implicit intuitional thinkers, and the devising of methods for studying the individual as a whole. Her work is likely to form a supplement to Dr. Pinard's work on measuring the strength of personality. An interesting piece of research is that being undertaken by Mr. G. W. Harding on rhythm on various types of motor activity. He has already found that improvements can be made in the method of training typists.

[1] Annual report for the year ended 1930. Aldwych House, W.C.2. Pp. 36.

SUCCESSFUL TREATMENT OF STERILITY IN THE MALE.

ALTHOUGH methods of diagnosis have improved considerably during the last ten years, the treatment of male sterility has made but little progress. Instigated by the work of Dr. Edward Martin, of Philadelphia, attempts have from time to time been made to cure sterility caused by a blockage of the epididymal canal by a short-circuiting operation. The operation of vaso-epididymostomy, however, has proved a failure owing to cicatrisation at the site of anastomosis, and most surgeons have abandoned the procedure as useless. In *Surgery, Gynecology, and Obstetrics* (February, 1931) Dr. Francis R. Hagner,

professor of genito-urinary surgery at the George Washington University, publishes results which throw a new light on the operation. Out of 31 cases of azoöspermia following bilateral epididymitis 19, or 61·3 per cent., were cured. Twelve of the 19 patients in whose semen spermatozoa reappeared became fathers, and in one of the remaining cases impregnation occurred but was followed by a miscarriage. This is the first series of successful cases reported, and Dr. Hagner is to be congratulated on his perseverance and on the excellence of his technique, which he describes in detail. In all of the successful cases fine silver wire was employed for sutures, otherwise the operation does not differ radically from that suggested originally by Martin. The author states that the reappearance of spermatozoa in the semen is not immediate, and as long as nine months must be allowed to elapse before judgment is passed. If at the end of this period no change is noted in the semen the operation may be repeated, provided a sufficient length of vas remains to allow the surgeon to make a fresh anastomosis. It is of course essential that the patency of the vas deferens should have been previously demonstrated. Dr. Hagner's anastomosis with the epididymis is a lateral one, and he satisfies himself that active spermatozoa are present by microscopic examination of the milky fluid that exudes from the cut tubules. If no spermatozoa are found another incision is made in a different situation and the examination repeated. Dr. Hagner avoids injecting irritating fluids such as collargol into the proximal section of the vas in order to test its patency, as he thinks that this is likely to increase fibrosis at the site of operation.

A TEST FOR ENCEPHALITIS.

A NEW biological test for encephalitis depends on the effect of the virus on the cornea, first observed by Grüter in 1912. In the last 18 months H. Knauer and P. A. Jaensch[1] have made about 100 inoculation experiments, mostly with cerebro-spinal fluid. The suspected material was inoculated on the cornea of a rabbit by scarification and the eye was examined every 24 hours by direct inspection, before and after staining with fluorescin, and by slit-lamp. Control material, including distilled water, physiological saline, serum from healthy children, and bacterial toxins had only a transitory traumatic effect, while of the 100 cerebro-spinal fluids and other pathological material examined 60 caused keratitis punctata. It proved possible to reproduce this keratitis by animal passage, which Knauer and Jaensch present as evidence of a living virus in the original material. The positive results were obtained with cerebro-spinal fluid from 26 patients. These included three cases of post-vaccinal encephalitis, one each of encephalitis in association with influenza, whooping-cough, and measles, and nine other acute cases of encephalitis, while the remaining 11 cases were chronic.

The positive results raise many points for discussion. For example, the blood-serum from the case of measles encephalitis was tested with negative results and it is hence concluded that the virus of measles is probably not the cause of the encephalitis. On the other hand, it was found that the blood-serum of a healthy child on the sixth day after vaccination—when, as Eckstein has shown, vaccine virus is present always—gave a strongly positive keratitis reaction, suggesting a close relationship between vaccine virus and encephalitis in such cases. The investigation of chronic cases of encephalitis, exhibiting for example the typical post-encephalitis syndrome, showed that a living virus capable of producing keratitis in the rabbit could be obtained as long as 12 years after the acute phase. In most of the cases of tuberculous meningitis inoculation of cerebro-spinal fluid gave negative results but in one of them keratitis developed. Histological examination of the brain showed an undoubted encephalitis besides the meningitis, while, on the other hand, an emulsion of tubercle bacilli failed to produce the usual keratitis. A case of septic meningitis also showed encephalitis and it is suggested that in such cases the encephalitis virus is present as well as the other invading organism. Certain cases of chronic hydrocephalus gave positive results and other work proceeding at Breslau is quoted to support the view that encephalitis may cause hydrocephalus.

The negative results are likewise interesting. For example, in the case of a 10-year-old girl the clinical picture was that of the acute stage of encephalitis lethargica of a month's duration. The negative effect of inoculation of cerebro-spinal fluid was a great surprise and appeared to throw doubt on the value of the method. Autopsy, however, showed a cerebellar tumour as the only intracranial lesion. Negative results were also obtained in cases of chorea and one case each of disseminated sclerosis and acute poliomyelitis. The strength of the positive reactions could be measured by classifying the keratitis according to the time when it was first observed and the time it took to heal. In one case Knauer and Jaensch succeeded in demonstrating a gradual diminution of the corneal reaction with cerebro-spinal fluid from a patient with post-vaccinal encephalitis treated with parental serum. Both as a diagnostic test and as a method of investigation this new procedure may well prove instructive. The fact that similar results were obtained with fluid from at least three types of encephalitis—lethargica, post-vaccinal, and post-infectiosa—by no means invalidates the test and may itself be significant.

[1] Jahrb. f. Kinderh., Feb., 1931, p. 265.

TREATMENT OF ADDISON'S DISEASE.

A REVIEW[1] of the current treatment of Addison's disease indicates that progress is being made in substitution therapy. The authors think that three forms of treatment are of value: (1) the Muirhead treatment, which consists in giving as much adrenalin as can be tolerated (by rectum, by mouth, and subcutaneously); (2) the injection of intravenous glucose and sodium chloride intravenously in the crises of the disease; and (3) the administration of suprarenal extracts. The first two of these methods, although they may produce temporary improvement cannot, of course, cure the disease, but Swingle and Pfiffner have prepared an aqueous extract of suprarenal cortex which is capable of reviving animals on the verge of death from suprarenal insufficiency and of restoring them to an apparently normal state of health which could be maintained by daily injections. When the use of this extract was combined with the other two methods of treatment the clinical results were sufficiently striking to suggest that it contains the missing cortical hormone in an active state. In treating the seven severe cases reported the supply of extract was still very meagre and intermittent; its administration could not be consistent or long continued, and it was used chiefly during the crises

[1] Rowntree, L. G., Greene, C. G., Swingle, W. W., and Pfiffner, J. J.: Jour. Amer. Med. Assoc., Jan. 24th, p. 231.

or when the other two methods had failed. In the most severe cases it abolished nausea and vomiting within 36 hours; the appetite returned to the point of hunger, and there was a remarkable increase of strength, with a rapid gain in weight. But the peak of improvement was usually reached in about a week and was followed by a general decline with a reappearance of active symptoms in from 10 to 14 days. The authors of the report are inclined to believe that the cortical hormone is as effective in controlling the crises of Addison's disease as insulin is in controlling diabetic coma, although it acts more slowly. They admit, however, that allowance must be made for the underlying cause of the disorder, and that confirmation of the results will be necessary. Messrs. Allen and Hanburys inform us that they have a limited supply of the extract and will supply particulars on application.

PRESERVATION OF SPECIMENS.

A NEW method of preparing anatomical and other specimens is now being brought forward, originating, we believe, in Germany. It consists in sterilisation followed by replacement of the water by hard paraffin in such a way that form and dimensions are retained. The result resembles a wax model, but it is firm and dry to the touch, and can be handled without damage. It is stated that all requirements are already fulfilled so far as anatomical, zoological, and botanical specimens are concerned, and the inventors hope they will soon be able to meet the "somewhat more exacting needs of pathologists in regard to colour and consistency." Sections may at any time be taken for microscopical examination, and are said to be perfectly satisfactory because the original tissues are well preserved. We have been much impressed by the specimens we have seen, and if the claims made for the method are substantiated, it will be of considerable value for museums and for the direct instruction of students. Under the supervision of Mr. A. L. Burlin, Ph.D., laboratories have been established at 297, Seven Sisters-road, London, where specimens can be sent for treatment by this "Eternitas" process. Medical men may, if they wish, carry out dissections at the laboratories at a proper stage in the course of preservation, and a stock of specimens is being prepared for sale to teachers and students.

HEREDITY IN DIABETES MELLITUS.

AN interesting contribution to our knowledge of the heredity of diabetes mellitus has been made by Dr. S. Kennedy[1] in his study of ten cases occurring in two generations of a family. The first generation consisted of 28 persons, the children of one brother and two sisters; of the 25 who could be traced, eight developed the disease and 17 did not. In this generation there were five amputations for diabetic gangrene. In the second generation 35 persons were studied and diabetes was discovered in two. In none of the ten cases did the disease run a rapid course, and all the diabetic patients were overweight. Clinical evidence suggests that the mother of the original three children died of diabetes, although the diagnosis was not made. Dr. Kennedy quotes other examples of families with hereditary diabetes, among the most remarkable being that observed by Joslin, in which 12 brothers and sisters had diabetes and all but one died of the disease. Dextrose tolerance tests carried out on apparently healthy members of diabetic families show that an impaired sugar tolerance is by no means uncommon. In one series this was found in 21 out of 40 patients. The evidence so far is too incomplete to show by what laws the tendency is inherited. Cammidge believes that in some human beings the tendency is transmitted as a dominant characteristic when the disease is likely to be mild and to appear later in each generation; and in others as a recessive characteristic, when the symptoms are more likely to be severe and to appear earlier. More data will be needed before this theory can be tested. It has been difficult to obtain hitherto, because a complete account of a family in all its branches is seldom available for more than three generations, and modern methods of diagnosis essential for strict differentiation were not available for the earlier cases.

[1] Jour. Amer. Med. Assoc., 1931, xcvi., 241.

MEDICAL TREATMENT OF CONGENITAL PYLORIC STENOSIS.

A FEW months ago we reviewed a paper in which Siegfried Wolff, of Eisenach, described some excellent results with Ibrahim's method of treating congenital pyloric stenosis without operation.[1] Wolff has now brought his total of cases up to 102 and publishes further details of his method.[2] The main stress is laid upon diet. He uses a maltose-protein milk which is concentrated to supply three times as many calories as a corresponding bulk of human milk. For this food he claims the three advantages that it has a high nutritional value in small bulk, abolishes all danger of dyspepsia, and in its concentrated state passes relatively easily through the pylorus. A quantitative scheme of feeding has to be worked out for each case, beginning with small frequent feeds—for example, 1 oz. 12 times in the 24 hours—and very gradually increasing their quantity and decreasing their frequency, always being guided by the abolition of the vomiting. This "methodical masking" of the symptoms, as Ibrahim has called it, is the basis of the whole scheme, and great care is needed in watching the child through a period of weeks with immediate return to smaller and more frequent feeds if vomiting should recur. Other food mixtures can be used, but the doctor must carry on with a single type of food in each case and not change about, so it is better for him to get to know one variety of milk-mixture thoroughly rather than experiment with several. Human milk Wolff rejects on several grounds; it is inadvisable to let babies with pyloric stenosis suck at the breast, he says, for this excites pylorospasm, and there are great practical difficulties of maintaining an adequate supply of breast-milk without the suction of the baby. Next in importance to diet comes the supply of fluid, and this is maintained by giving once or twice a day 100 to 200 c.cm. of physiological saline or 5 per cent. glucose solution by means of a 20 c.cm. record syringe, the solutions being kept in sterile ampoules so that the method is applicable to out-patients or private practice. The frequency of this supply of fluid is gradually decreased and it is discontinued as the child retains more by the mouth. Frequent stomach wash-outs are important, ordinary water being used; the number employed is determined by the number of daily vomits and the state of the gastric contents obtained. Between feeds the baby must be kept as quiet as possible, since every disturbance is liable to cause vomiting, and warm applications to the upper

[1] THE LANCET, 1930, ii., 702.
[2] Med. Welt, Jan. 10th, p. 28.

abdomen are said to have a soothing effect. Atropine valerianate solution (1 in 1000) is given in minim doses before each feed, the amount being increased cautiously to two or even more minims. In hospital this can be given subcutaneously, but the drug is equally effective by the mouth.

It is often argued that operative treatment is relatively economical, cutting short the duration of the illness, and saving weeks of anxiety and troublesome supervision. But, says Dr. Wolff, economy should never be urged as an indication for an unnecessary and dangerous operation, and even if surgical statistics could show results as good as his treatment—namely, a mortality of less than 2 per cent.—he would still consider "conservative" methods preferable. Now that exact details are available these methods should have adequate trial in this country where, by all accounts, congenital pyloric stenosis is more frequent than anywhere else. The continental nomenclature which classes all such cases as "pylorospasmus" must be understood to mean true hypertrophic stenosis in the majority of cases.

THE OBLIGATION TO NOTIFY.

THE hearing of a case last week at the North London Police-court should bring home to practitioners their responsibility in the eye of the law for the notification of infectious disease. A summons had been issued by the Islington Borough Council against A. C., an Italian restaurant keeper, and Dr. X., practising in Upper Holloway. The Italian was summoned as the head of the family on the following charge: being aware that his boy, aged 8, was suffering from an infectious disease—namely, diphtheria—he failed to send notice to the medical officer of health under the provisions of the Public Health (London) Act, 1891. Dr. X. was summoned as a medical practitioner attending a patient suffering from infectious disease, for failing to send forthwith to the medical officer of health the certificate required under Section 55 (1b) of the same Act. The circumstances were set out by the solicitor for the Islington council. The doctor being called to see the child took a swab of the throat and sent it to the medical officer of health. On receiving the report he saw A. C. at his home and told him that the child was suffering from diphtheria, giving him a certificate addressed to the medical officer of health which he told him to take to the town hall. Four days later Dr. X., seeing the child in the street, wrote himself to the medical officer of health enclosing a further certificate. As a result of this letter an inspector called at A. C.'s house, and finding no one at home he went to the restaurant where he saw the child playing with other children. A. C. admitted having received a certificate from Dr. X. and having failed to forward it as he had been told to do. He had, it seems, sent for Dr. Y., an Italian, who told him that the child was suffering from tonsillitis; being thus reassured he did not send the certificate. The inspector obtained an admission from A. C. that he did not tell Dr. Y. that he had previously called in another doctor who had taken a swab and issued a certificate. The Islington public health committee, said the solicitor, felt it was not their function to apportion blame; it was, however, the duty of a medical practitioner to notify a case of infectious disease to the medical officer of health and to see that he was in fact so notified. A sanitary inspector who gave evidence admitted that certificates were sometimes sent to the health department by the parents, and that this procedure had the advantage of getting the department in personal contact with the parents, thus preventing hours of delay. A. C. pleaded guilty to the charge and was fined 40*s*. and costs, the magistrate registering surprise that this was the maximum penalty he could inflict. Dr. X. pleaded not guilty on the ground that the words in the Act were: "send the certificate to the medical officer of health." No method of sending the certificate was laid down and he submitted it was sufficient to send it by the parent. The magistrate ruled that there was not a sufficient sending of the notice within the terms of Section 5 of the Act; he dismissed the practitioner from the case under the Probation of Offenders Act, remarking that the case had been properly and fairly opened and public attention called to the matter. Practitioners will no doubt do well to bear this ruling in mind.

THE CINEMA INSTRUCTOR.

AN exhibition of a talking film made from the performance of a low Cæsarean section by Dr. DeLee, of Chicago, invites renewed attention to the possibilities of the cinema as an important factor in medical education. A number of medical men who have seen this film have come away impressed by possible teaching developments which this exhibition suggested. There have been, of course, several surgical cinematographs before, and we all remember vividly the splendid representations of Harvey's experiments demonstrating the circulation of the blood. Hitherto, all the films of scientific or medical interest that we have seen have been silent. The addition of the voice is a real gain in the educational film, whatever it may or may not be in the world of entertainment, for the personality of the teacher comes into play in a manner impossible without speech. Moreover, speech allows exact explanation of actions while those actions are taking place before the student's eyes, replacing captions, which either precede or follow in the case of silent pictures. Every student, moreover, is familiar with the difficulty in finding room for more than a few spectators in the surgical theatre. The film presents the spectacle in detail to the easy observation of any number, although what they see is not exactly what they would see if they were actually observing the living subject. Even the pitch of photographic technique reached to-day cannot give the impression of living flesh and blood, or of the different textures of the tissues manipulated.

Surgical operations are by no means the only field for cinematographic medical instruction. It is easy to imagine the scope of this method in anatomy and physiology and bacteriology, and future years will surely see its routine use in medical education, although at present it is not easy to see how this vision is to be made real. The production of films comparable to that shown by Dr. DeLee is exceedingly expensive, and anything less good is scarcely worth producing. A very wide demand must exist before such films will be forthcoming, and their cost will have to be met by some sort of coöperative organisation such as should arise when medical men recognise and insist upon receiving the advantages in post-graduate teaching.

LEASOWE HOSPITAL.—The Liverpool Open Air Hospital for Children at Leasowe is to be given the additional name of "The Margaret Beavan Hospital" in memory of the late Miss Margaret Beavan, formerly Lord Mayor of Liverpool, who was keenly interested in child welfare.

A POST-GRADUATE COURSE

MOTIVES AND MECHANISMS OF THE MIND.*

XI.—WISH-FULFILMENT.

VIEWED from the standpoint of wish-fulfilment, the study of human behaviour is comparatively simple. Whether the motive be conscious or unconscious, purposive behaviour is directed towards the fulfilment of a wish. The wish is the dynamic basis of life and is the channel through which life's energy flows towards the ultimate goal of some kind of satisfaction. "I feel I want" is the primary motive force of life, and expresses the double aspect of the wish and the feeling which is associated with it. From this point of view we may group together instincts, needs, hungers, wishes, and the "will," as being different aspects of the same positive creative urge. Whether they be conscious or unconscious, they form the basis of all purposive behaviour.

What part then does consciousness play in wish-fulfilment? This point has already been referred to in a previous lecture, but perhaps it is as well to repeat that consciousness—thinking, reasoning—is not itself possessed of energy. Consciousness is either the *selective function*, the purpose of which is to choose those wishes which are most important and decide how they shall be achieved, or it is itself a form of *purposive behaviour*, in which case it is motivated from a deeper source. Consciousness is not the source of the will, but an aspect or expression of it. It is not creative in itself apart from those deeper motives which activate it, but it is comparative through its use of material derived from memories of past experiences and its further imagination of what might be, but has not actually been, experienced.

It may be said that the conscious mind is the *means by which we measure our motives*. Let us examine this statement from the point of view of philology. We find that the Latin word for "mind" is "mens" and that the same root occurs in many other words, such as "mensis"—a month, "mensura"—a measure, and "mentir"—to lie, or measure falsely. Reason, rational and ratio, come from "reor"—to think, and its past participle derivative, "ratio"—a calculation. In each of these words there is the same idea of a static *measure*. If we turn to the corresponding root from which the word "emotion" is derived, we find the Latin words "moveo"—I move, "mos"—the will or custom, "mox"—soon, and the derived English words, "motive," "mode," "mood," all of which indicate the dynamic idea of *moving*. Conscious reason is the means by which we *measure*, but it is the will and the wish that makes us *move*. So we may say that "measures" are the children of "movements," and words of feelings.

PLEASURE AND HAPPINESS.

What are the true meanings of these words which mean so much to all of us? They can only be understood in terms of wishes satisfied. *To satisfy a wish is to feel pleased* and the state of pleasure lasts during the process of satisfaction. Whatever the wish or need may be, its satisfaction is the source of pleasure, whether it be the fulfilment of an excretory function, or the satisfaction of hunger by food, the intense emotional demands of the sexual urge, or the more complicated satisfaction of sublimated achievement. But the trouble about all pleasure is that it is transient and may find itself in conflict with other wishes that are frustrated by its own fulfilment. This is particularly liable to be true with regard to sexual wishes, which are so prone to conflict with the wishes of conscience (I want to be good) and the fear of punishment (I want to be safe).

Is it not possible for us so to organise the many willing horses of our dynamic team that they may all pull in the same direction towards the same goal? For only thus can we hope to achieve happiness. Firstly, this necessitates a goal upon which all members of the same team may be agreed, and it must therefore be a distant one. It also presupposes the necessity for organisation, comparison, selection, inhibition, and control, which is the function of a coördinated consciousness. We may state, therefore, that these are the theoretical requirements for happiness—viz.:—

1. Wish-fulfilment—for all the members of the dynamic and impulsive team.
2. Direction towards a single distant goal (*the unifying ideal*).
3. The coördinative control of consciousness.

Classification of Motives.

If motives are so important, being the driving power of our behaviour, it is worth while to try to classify them, in order to understand them better. This is a difficult matter, but if we divide our motives into conscious and unconscious, these may again be subdivided as follows:—

(1) CONSCIOUS MOTIVES.

(*a*) *Positive:* "I want to."

(*b*) *Negative:* "I want not to" (*not* "I do not want to").

It is important to realise that when a person says he does not want to do a thing he is still expressing a positive wish. It is more accurately expressed by saying "I want not to do a thing." He is not denying the wish, but expressing a wish not to, which is not quite the same thing. For example, if a patient says "I do not want to live," he is not necessarily denying that he wants to live, but he is making a positive statement of a wish not to live, and we must not be surprised, therefore, if this wish achieves fulfilment in such positively motivated behaviour as suicide.

There is a further important distinction which may be made between conscious wishes—namely, those which are:—

(*c*) *Direct*—being wished for as an end in themselves.

(*d*) *Indirect or deferred*—being wished for not as an end in themselves, but as a means to an end. To work for medical examinations during all the years of training when much unwished-for drudgery is gone through in the pursuit of the distant goal of the comparative freedom of ultimate qualification, is an example of an indirect or deferred wish. Such wishes are of a higher order than the direct ones, in that they often involve the inhibition of more immediate contending wishes. Deferred wishes are often thought of as if they were in fact external compulsions, but nevertheless it is true that they are internal wishes. For example, work may be unpleasant in itself and we may say "I must

* A course of 12 lectures delivered under the auspices of the Tavistock Clinic, Tavistock-square, by Dr. E. Graham Howe during the autumn session of 1930. Earlier lectures of the series have appeared weekly in THE LANCET since Jan. 3rd.

work to live," as if someone were forcing us to work. But if we want to live and work is necessary to live, we want to work also as a means to the end of living. Similarly, to take unpleasant medicine is not so much an act under compulsion as a wish to take something which, although in itself unpleasant, is a means towards the desired end. This distinction is in practice an important one, because it is very much easier to do unpleasant tasks if we feel we want to do them, rather than to make the mistake of feeling that we are compelled to do them, which may arouse in us rebellious feelings of refusal.

(2) UNCONSCIOUS MOTIVES.

(*a*) *Needed.*—This is a very important group into which may be put those defence mechanisms or automatic stabilisers which have been discussed in previous lectures. The feelings of fear, guilt, and inferiority *need protection*, which is automatically provided by means of the defence mechanisms of over-compensation, identification, projection, &c.

(*b*) *Desired.*—This group of unconscious motives includes those primitive, infantile, crude, and often symbolised wishes, which occur most frequently in mental disorders where normal growth and development has failed to take place—e.g., the various modifications of the Œdipus motive or the death wish, &c.

Conflicting Wishes.

When we drive a car we are not satisfied unless the various cylinders are working in time and harmony as to their function. If, out of the six, one is out of harmony so that it is working against another, the result on the functioning of the engine is to cause it to lose a large part of its dynamic efficiency. The same is true of human motive and behaviour, and yet it is to be feared that for most of us our motives are, to some extent at least, working in conflict rather than in harmony, to the detriment of our efficiency. The only way in which the inevitable multiplicity of motive can be unified, is by the exercise of the selective function of consciousness which must determine, like the magneto of an engine, which motive is going to operate "now." Otherwise, we are likely to sacrifice the happiness of to-morrow for the pleasure of to-day and the "birthright" for the "mess of potage."

There are two different ways of resolving conflicting wishes. The first is by *conscious suppression* with a possible need for ultimate sublimation, and the second is by *unconscious repression*, which involves the loss of control of the fundamental motive which still remains active and may be the source of the development later of purposive symptoms through a side channel of substitutive symbolism.

It would seem simple enough to understand what is meant by the words "selfishness" and "unselfishness," until we start to examine them psychologically, when we find that these words are in fact very confusing. If all our behaviour is motivated by a wish, whether it be a wish to avoid punishment, to be praised, to please someone, or to be good, it is obvious that from one point of view all such behaviour may be called "selfish," and no behaviour is worthy of being called "unselfish." Yet the everyday meanings of the words remain, and unselfish conduct is just as much desirable, even if psychologists say that there is no such thing. But we need only presuppose the existence of the *herd instinct*, with its desire towards social coöperation and adaptation, to realise that there is a group of wishes, the satisfaction of which depend upon "unselfish" behaviour, in which personal satisfaction is derived from some benefit obtained by another, even if it is at the expense of our own effort and loss. Our faith in human nature depends primarily upon our belief in the existence of this herd instinct, which is most deeply satisfied by behaviour which is directed towards the welfare of others, rather than the self. The development of this *coöperative tendency* would seem to be a sign of psychological growth and emotional maturity. Such behaviour is the source of the deepest personal satisfaction and yet it is "unselfish."

Our attitude towards the problems of psychology will therefore be found to depend to a great extent on our belief in a fundamental wish to coöperate with other members of the social group. The psychology of Adler is largely based upon this principle and he ascribes all neurosis to a failure of adaptation in this regard. It is the basis of our unselfish and altruistic behaviour, and yet it is itself to be regarded as a fundamental activity of wish-fulfilment—the wish to coöperate, the wish to be accepted by and of service to the other members of the herd. The encouragement of this wish must therefore be the basis of our therapeutic endeavours, because it is through its activity that interest in others outside ourselves, "object love" and unification of all our conflicting wishes towards a single purpose and a single goal, needs to be directed. Even such altruistic endeavours as are represented by the words "sacrifice," "service," or "surrender," are activities motivated by the herd instinct, the wish to coöperate. Social service, social coöperation, and sacrifice, unless *willing*, are of little use either to the community or to the individual.

The difference, then, between "selfishness" and "unselfishness" would seem to be that the wish in the former is self-centred and emotionally immature, whereas in the latter it is not self-centred but object-centred, herd-centred, or cosmo-centred, and is emotionally mature. But both are motivated from the same primary source, "I want."

Conscience.

Having considered the inevitability of emotional conflicts and the difference between selfish and unselfish behaviour, we must now try to understand something of the source and function of conscience. It may perhaps seem a startling statemeut to make, but *conscience is a form of purposive behaviour and is motivated by wishes.* In other words, conscience represents something that we want or, more unconsciously, need. The function of conscience is to deal with those intolerable and unsuitable wishes which, if exercised, would get us into trouble. It is largely acquired through suggestibility from the authorities of our earliest environment, and is formed by the substitution of an *internal inhibition* to take the place of their *external prohibition.* Our attitude may be one of identification with authority which is mainly a defensive one, or it may be one of resistance, which is inclined to be offensive. Conscience, the measure by which we rule our lives, is in the first place derived from *fear*, and only later is it capable of development into the higher and more mature character of *love.* But in either case it is a measure of wish-fulfilment and according to whether our primary attitude is one of identification or rebellion, we shall either wish to do, or wish not to do, that which we measure to be our duty.

Conscience is sometimes spoken of as the "still small voice," but it comes to many of us in a way that is neither still nor small. It is liable to make cowards of us all and invalids of many. Many factors go to make it up, and it is necessary to analyse it

before we can say which are good and which are bad. If we take it to pieces analytically we may trace its development from several quite different sources.

(*a*) *Imago affects: superstition.*—The first source of conscience is derived from *father imago* and it is for this reason composed largely of defensive reactions to fear and guilt. The feeling "I ought not" is both deep and primitive, and only later becomes rationalised in consciousness. It has already been mentioned how the defensive mechanisms for imago fear and guilt tend to be of the propitiatory and sacrificial kind. The general idea is that wish-fulfilment, interest, and pleasure, being associated with guilt, are to be regarded as *wrong*, and that the pursuit of the duty imposed by an external authority, preferably with a certain amount of personal discomfort, is *right*. Such ideas, however, tend to be extremely crude and undifferentiated, and seldom conform to a reasonable and balanced judgment as to right and wrong. They may be grouped under a general heading of superstitions.

(*b*) *Vanity.*—It may perhaps seem strange to associate conscience with vanity, but in many cases it would appear to be correct to do so. It is common with many of our patients to hear them say that they are the guiltiest people in the world or that they have committed the unpardonable sin. Their guilt being measured in superlatives, is merely an inverse statement of the superlative nature of their self-regard. This arises out of the fact that we are liable to identify ourselves with father imago, so that the external authoritative standard also becomes the internal standard of what we feel we ought to be. We feel we ought to be like father, and father being invested with the omnipotence of imago, we feel that we also ought to be omnipotent. The frequent reference to "miserable sinners" in the Prayer Book would seem to be derived from this same unconscious source and may also be regarded as of the same type of inverted vanity. It may perhaps also be suggested that identification with the Christ figure, so-called Messianic over-compensation, is another form of vanity. It must not be forgotten that there is all the difference between striving after a high ideal and the phantasy of assuming by identification that one has attained it. This kind of conscience is always obsessed with the idea of its own self-importance.

(*c*) *Convention: suggestibility.*—Another source from which our conscience is derived is to be found in the domestic and social conventions of our early environment. To this extent, conscience is a relative matter and different standards of moral conduct appertain to different historical periods, countries, and families. The stern and patriarchal parent of the Calvinistic type is very liable to impose a standard of conscience, which can only be lived up to with the aid of the development of neurosis.

These sources of conscience compose the "super-ego" described by Freud. The super-ego is a very stern master and frequently weighs like a millstone round the neck of the already over-burdened neurotic. It is probably true to say that the fundamental difficulty of neurosis is not so much due to the nature of the *wishes*, as to the weight and character of those *inhibitions* which comprise super-ego or conscience. The feeling state in neurosis is inevitably largely one of fear and guilt, and consequently freedom for individual wish-fulfilment and development is very seriously hampered.

There are two other sources of conscience, however, which are free from this compulsion of fear.

(*d*) *Learning by experience* is the desirable way in which the primitive "super-ego" type of conscience needs to be modified. As we grow older, we should learn that much which was previously accepted without question as an external prohibition requires modification. We start to think for ourselves and so develop our own standards of moral conduct. They may be very different from those imposed upon us by our parents and unconscious imago feelings, and yet leave us possessed of a conscience still, but one which is much less rigid, formidable, and fearful. Learning by experience leads to the development of wisdom and common-sense, which can never be achieved merely by an uncritical acceptance of dictatorial statements by external authorities.

(*e*) *The still small voice.*—Finally, there is that last and most important component of conscience, which may perhaps be truly called the "still small voice." What is it and from whence does it come? It is our belief in the existence of this factor which, as has already been mentioned, will largely determine our faith in, and attitude towards the problems of, human nature. If there is any instinct of coöperation, or innate will to love one's neighbour, or fundamental tendency towards love and growth, this must always be the basic factor in the development of those moral standards which determine our higher conscience. The feeling state associated with this "still small voice" is not that of fear, which speaks to us in tones of broadcast thunder, but of love. If we believe in the tendency towards object-love, coöperative and altruistic, as being the fundamental inborn characteristic of human nature, it is this factor in conscience which is of utmost importance and deserves our greatest respect. But its existence is dependent upon growth, and growth cannot take place where there is fear or the crude type of undifferentiated affects associated with imago.

There are thus two types of conscience mutually exclusive: one, although rationalised, is primitive, unconscious, compulsive, loud-voiced and motivated by fear; the other, mature, conscious, quiet, free and motivated by love. It is quite obvious with which we may expect to have to deal in neurosis. Superstition, vanity, and suggestibility, however subtly they may be rationalised into more favourable disguises, such as "conscience" and "ideals," must be regarded as the chief enemies of our therapeutic endeavours.

With regard to this problem of conscience, it is interesting to contrast the attitudes of the *melancholic and the criminal.* Whereas the former may be quite sure that he has committed the unpardonable sin, the latter is equally certain that he has not. The conscience of the one is as accusing as the other is unwilling to accuse. It may be stated that the main factor in criminal psychology is that *the criminal must be able to believe in his own innocence.* This infallible capacity for ego-phantasy, rationalisation, and projection, may be regarded as the hall-mark of a fundamentally criminal type of mind, and is in complete contrast to that of the melancholic.

Irritability, Temper, Depression.

These three are all associated with frustrated wish-fulfilment. Irritability and temper are degrees of reaction towards our inability to have things as we would wish them to be. When things go wrong with us, we may react positively in terms of irritability and temper, or negatively in terms of sulking and depression. The latter are moods resultant upon disappointment. We feel depressed because we cannot have what we want. It is interesting therefore

to suggest that the depression of melancholia, from one point of view at any rate, may also be associated with the frustration of desire, its uncontrollability being due to the unconscious nature of the wish that is being denied. This would seem to be confirmed by the exaggerated nature and inexorability of the conscience in melancholia, the function of which is inhibitory towards the impulses of desire. An extreme sense of duty is liable to be a very depressing thing, and unless it is *willing* it is a frequent source of unhappiness and disappointment.

Hysteria and Conversion Symptoms.

Hysteria is not only found in women, nor is it only to be diagnosed in the presence of irrational laughter and tears. It is one of the most protean and varied of mental disorders, but the psychology of hysteria will always be found to include the conflict of opposing wishes, "I want to—I want not to," and is usually associated with sexual desires striving for satisfaction against the opposing inhibitions of a conscience which is dominated by fear. Whichever side of the conflict may win (it is usually "conscience"), the other is inevitably disappointed, and there is no chance of happiness for the hysteric. What commonly occurs is emotional irritability and irrational overflow in temper, tears or laughter, with perhaps unconscious compromise by the development of some symptom, be it phobia, tic, opinion or illness, which by substitution or symbolism is able to gratify that repressed desire which conscience will not tolerate. The solution of the conflict is thus found by unconscious compromise, and the patient, being quite unaware of the underlying motives, may apply to the doctor to be cured of the very symptom which is the means of gratifying the consciously intolerable wish.

Where substitution of a physical symptom for the emotional problem has taken place we speak of "conversion hysteria," and in this disorder we seem to be dealing with a peculiar liability to transfer emotional problems on to physical symptoms. It is as if emotional energy, which might have come out at higher levels of behaviour, or have been expressed in dreams or felt as emotional conflict, has been resolved by the development of physical symptoms through neural paths of transmission.

It is interesting to ask the question: "What would have happened to Cinderella if her fairy-godmother had not provided the means for her to fulfil her wishes?" In the world of everyday life, apart from phantasy, fairy godmothers are not frequent, because we cannot all be winners of sweepstakes. There are many Cinderellas of both sexes who solve their problems through the mechanism of conversion hysteria, developing the disabilities of abdominal pains, contractures, "neuritis," and other physical disorders as a justification and a compensation for the frustration of their wishes.

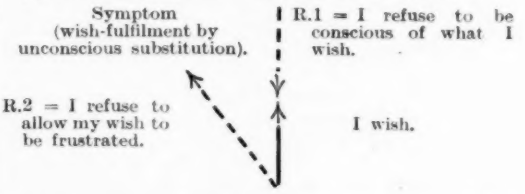
Not all of us have this peculiar capacity for physiological interpretation of psychological stress such as occurs in the cruder forms of conversion hysteria, but in less obvious degrees the same mechanism is probably responsible, nevertheless, for a large part of the minor disorders of general practice. Social conditions and economic hardships make life difficult for the masses and wish-fulfilment hard to achieve, and we may anticipate that the result is a large increase in liability to disease. In view of the amount of money which is spent every year on sickness benefits, added to what is lost from production owing to absence due to ill-health, it would seem as if economics as well as medicine has much to learn from the development of a psychological attitude towards the problems of social and individual unhappiness.

Resistance.

The understanding of resistance is very important in psychotherapy, because it needs to be overcome before we can obtain the desired readjustment towards the realities of life in our patients. Resistance is partly a consequence of "super-ego" or the conscience of fear, and is an unconscious or mechanical defence against wishes which are felt to be wrong and which are therefore not consciously tolerated. Repression, or automatic obliteration from consciousness, is a consequence of this resistance. "I (the measure) must not know what I want (the motive)," and the motive therefore does not enter consciousness, although, being dynamic and out of control, it is liable to achieve fulfilment in one way or another, frequently by the development of symptoms.

We may therefore divide resistance into two kinds:—

(1) Resistance against recognition of a motive.
(2) Resistance against frustration of a motive.


Symptom
(wish-fulfilment by unconscious substitution).
R.1 = I refuse to be conscious of what I wish.
R.2 = I refuse to allow my wish to be frustrated.
I wish.

The above diagram will make this more clear. "R.1" is the repressing force in consciousness which refuses to recognise the intolerable motive, because of the existence of conscience or "super-ego." This is the first resistance which we meet with in our patients. They are unwilling and unable consciously to recognise and admit the true nature of their underlying motives. It is, however, only the first and easiest part of the resistance which has to be overcome before the patient can be put on the right road to an acceptance of reality.

The second resistance, "R.2" on the diagram, is that which the patient puts up in order to maintain the fulfilment of the wish which has been gratified in some kind of symptom, *even though it is for that same symptom that he is asking for a cure.* This is what we mean when we say that the patient does not wish to be cured—*he does not wish to have the gratification of his unknown wish frustrated.* However, before he is well the wish must first be recognised (against the opposition of R.1), and then either sublimated, modified, or eliminated (against the opposition of R.2), and this must be achieved at the instigation of the patient's, and not the doctor's, wishes.

The therapeutic method is carried out mainly through *free association* and *transference.* The free association method has already been described as a retracing of transferred affects back to primary causes. It is an attempt to *de-condition* what have become conditioned reflexes. The phenomena of transference can only be understood in terms of imago affects, the doctor or analyst being reacted to *as if he were imago,* and having attached to him the imago affects which are present in the patient. The analyst becomes the objective focus of the patient's conflict, which is worked out with regard to him, but largely independent of his own real personality.

A good example of the compromise which may

take place between the conflicting forces of wish-fulfilment and super-ego was given by a patient who required to rationalise for himself his addiction to masturbation. He was a medical student, and stated that he had had the idea of making a culture from his semen in order to cure the venereal disease which he anticipated as a punishment for his sin. By this ingenious method he was able to satisfy both his wish and his fear of consequences.

FRUSTRATED WISH-FULFILMENT.—CYNICISM.

A study of the psychology of the cynic throws an interesting light upon the way in which unconscious mechanisms may motivate behaviour. The cynic is an example of frustrated wish-fulfilment. He is primarily egocentric, wanting to get more out of life than he is willing to put into it. His disappointment at failing to get out of reality the satisfaction of those wishes which he has desired in phantasy has led to the development of a projection mechanism in defence of his ego phantasy, and he then says, "*It* is all wrong. No one can ever do *it* any good." A cynic is a repressed sentimentalist, who feels that "it" ought to be just as he would like it to be, and that it certainly would be if only he had his way. The last factor in cynicism is usually its saving grace—a sense of humour, the protective purpose of which is to make fun out of fear and disappointment.

PHANTASY.—LYING AND STEALING.

Where reality fails to satisfy wish-fulfilment, phantasy offers a ready means of gratifying it without effort, as long as reality can be excluded with safety. Lying and stealing are both examples of wish-fulfilment dissociated from reality. The motive of lying is wish-fulfilment, substituting the desired phantasy for the reality which is not desired. Whereas lying gives false measure with words, stealing takes it by deeds, and the phantasy motive is the same in either case. *The development of a sense of objective reality and acceptance of its limitations is a necessity for psychological growth.* To the child, there is at first very little difference between phantasy and reality, and wish-fulfilment may be achieved with as much satisfaction in imagination as in fact, because the two have not as yet been clearly distinguished. For this reason it is only by development through experience of reality that the child is eventually able to distinguish between what is true and what is not true, between what is "mine" and what is "not mine." Failure to accept the inevitable limitations of reality leads to a flight into the easier realms of phantasy, with all its consequent mental disorders, lying, stealing, and other forms of anti-social behaviour.

Alcoholism.

It is also interesting to consider alcoholism in relation to wish-fulfilment. The most usual treatment for this disorder is by segregation and prohibition, but such simple methods do not take into account the factor of wish-fulfilment. If a patient addicted to alcoholism is put away in an institution for three months, where he is free from temptation because he cannot obtain what he desires, there is not necessarily any change in the patient himself and his wishes, when he is again liberated in the neighbourhood of a public-house. It is easy enough to prevent anyone from having access to alcohol, but it is a much more difficult matter to prevent him from wanting it. Hence the number of relapses which occur when the addict is again faced with the opportunity for indulgence. We need to understand the *motives* for alcoholism, and primarily we must realise the simple fact that *the motive is not to be found in the flavour.* Alcohol is a means to an end and not an end in itself. Let us try to analyse the motives which are gratified in this form of wish-fulfilment.

Thirst.—It may seem unnecessary to put this simple factor first, but it is important because thirst is a very variable quantity. Some individuals have an unusual capacity for imbibing fluids and feel the need for fluid intake more than others. One patient, for instance, would never in the ordinary course of events drink less than two quarts a day, whether it were milk, water, tea, or any other fluid. It was only after he had consumed that amount that he began "drinking," when he would quite easily double it. Such a person must be considered more prone to alcoholism than one whose normal fluid consumption is only half the quantity.

Removal of inhibition is probably the most important single factor in alcoholism and is very closely associated with the problem of conscience. Conscience being inhibitive and selective, it may be regarded as a crust of ice, protectively developed over deeper motives, which requires thawing before those deeper motives can be expressed and gratified. Alcohol is a great stimulant to sociability and conviviality, removing the crust of inhibition and setting free the deeper warmth which lies below. From what we know of homosexuality, it is easy to realise that it is very frequently a repressed source of wish-fulfilment, and it is interesting for this reason to connect social drinking with the removal of homosexual inhibitions. It is probable, therefore, that some measure of repressed homosexuality is a frequent cause for alcoholism of the social kind.

Removal of prohibition.—The "rebellion" motive must not be lost sight of because it is very common, and therefore any degree of probibition is liable to induce the opposite reaction. To be told "you must not drink" will always in many people arouse a wish to drink, even if it were not strongly present before. Rebellion being a valuable part of the biological tendency towards growth and independence, prohibition is liable to defeat its own ends *unless it prevents growth altogether.*

Euphoria.—Life being what it is, it is not easy always to feel "good," but alcohol offers us a chance of feeling better. It will, therefore, appeal to anyone who for any reason, whether endogenous or exogenous, is not feeling "good." Where normal wishes are not being given opportunity for wish-fulfilment, alcohol will afford the relief of fairy tales and phantasy.

Cyclothymia and early manic-depressive phases.—A tendency towards alcoholism may be the first evidence either of the depressed or the exalted phase, being resorted to in the first case as an attempt to overcome the intolerable burden of unreasoned depression, in the second under the influence of the pathological euphoria of exaltation.

Filling the gap.—Alcohol is a great "filler of gaps" where other defence mechanisms are weak. It fills the gap between fear and the phantasy of courage, between inferiority and the phantasy of success, between guilt and the fear of punishment. The spoilt child will therefore be a happy hunting-ground for alcoholism, finding in it the euphoria and success which neither life nor defence mechanisms are able to discover.

Oral erotism is a source of wish-fulfilment in some individuals more than it is in others, and in such cases there is a primacy of desire associated with gratification of the sensual pleasures of the mouth. Some people are always wanting to put things into

their mouths, and to them alcohol is a convenient form of sensual gratification.

Conventionality and suggestibility are also factors in alcoholism, because some people are more inclined to be influenced by their environment than are others. It is interesting to note that alcoholism is to some simple minds a sign of manhood, rather than of the psychological childishness which is, in fact, the true underlying condition.

Habit.—When alcoholism has become a habit, like all oft-repeated patterns of behaviour, it is hard to break and tends to repeat itself as the way of least resistance.

Finally, there are *physiological factors*. The development of antibodies in the tissues and in the blood stream demand a supply of fresh alcohol to eliminate them. This is, of course, the familiar function of "the hair of the tail of the dog that bit you," the morning after the night before.

Externalisation.

It is a matter of common observance that, for many individuals, life seems to repeat itself according to familiar patterns. While one seems to be the favoured child of fortune, another seems to be marked out at every point for disappointment and failure. Nietzsche formulated a "Law of repeated similars" to account for this fact of compulsive repetition, but when we realise that for each of us *life is what we feel about it*, and also that our feelings are so deeply seated, so unconscious and so beyond control that it is not easy for them to change, then we see that the patterns of life's repetitions may be due to the continuity and unchangeability of our own individual feeling states, rather than to any objective reality external to ourselves. Psychologically, it is quite easy to understand that there are some people who *prefer* trouble and they are therefore more likely to be the ones who find it. But this does not mean to say that all misfortunes are due to wish-fulfilment. It does, however, suggest that they are sometimes due to more than chance.

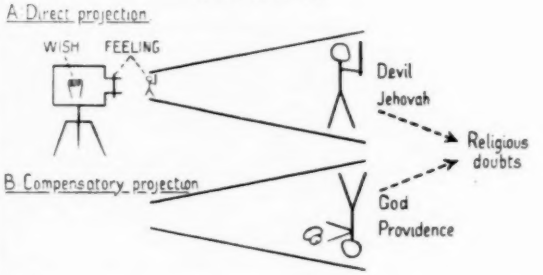
Our knowledge of life is based upon our feelings about it and our own personal experience of it. On all sides we see the same tendency towards anthropomorphism, in which our explanations of the universe find it extremely difficult to evaluate it from any other point of view than that of human primacy. This is perhaps to some extent inevitable, although it must be regarded as certainly being a limitation of the facts. But the same tendency is carried a step further by those of us who regard the universe, not merely anthropomorphically, but also as a *reflection of themselves*. It is as if, when they look at life, they are looking into a mirror and see not life but themselves. Some of us look at life as through a glass, darkly, but others, who are sure that they see more, see it more clearly only because it possesses the quality of their own reflected image.

THE SHADOW ON THE WALL.

The fact that what we see is based upon our feelings and wishes may be illustrated diagrammatically. Take, for example, the feeling about the punitive father. In Diagram II. (A) below, the light in the magic lantern represents the wish, the slide in this case the "feeling about father" (the picture of the patriarch with the punitive stick upraised), and on the screen of life, apparently objective in its reality, appears the same terrifying figure.

Diagram II. (B) represents the *compensatory method of projected wish-fulfilment*, where the punitive father has been replaced by that of a benevolent providence holding out a loaf of bread this time instead of the punitive stick. The one is merely a compensatory image, based upon the primary existence of the other. Both may appear together upon the screen of life,

DIAGRAM II.

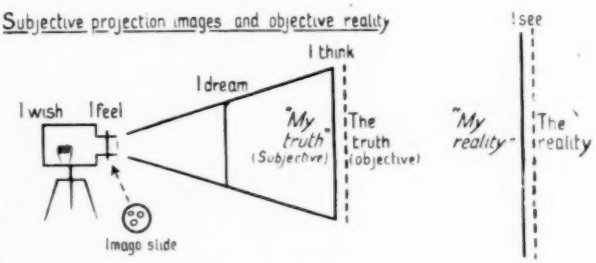


waging a mock war to the confusion of our faith. When we see most vividly the punitive Jehovah or the Devil, we are very liable to doubt the existence of the benign Providence of our dreams. Misfortunes occur to all of us, and it is a very simple mistake to associate them with the projected image of a punitive father imago.

The above simple scheme of image projection can be made even more helpful and suggestive by reference to Diagram III.

Again, we have the magic lantern projecting its images, but this time upon three screens, two of which are internal to ourselves, and the third is

DIAGRAM III.



supposedly "reality." The first screen is that of the *dream life*, upon which we see a crude undifferentiated picture image. The second is the screen of *rational consciousness*, in which the image has become changed into a more abstract form of symbolism, which nevertheless is motivated from the same source. On this screen we say: "I think it, therefore it is true" (and it is true enough for me, but that is not to say that it is really true). There are at least three kinds of truth: my truth, your truth, and the truth. The first two correspond with the projected images on my screen and your screen, but it is too much to assume that either corresponds with what is actually true in an abstract and objective reality. The same applies to the third screen of the real objective world. We do not always see what is actually there, but we see what we feel about it and what we wish to see.

By *re-internalising* what we see we are able to understand ourselves by reference to what we feel about life. To ask a patient what he thinks of Ramsay MacDonald, the Pope, Clara Bow, or a holiday by the seaside, is to ask him to draw a picture of *himself*, interpreted through what he feels about some aspect

of life. So we may learn what he is like; and if he wills, he may both learn and simplify much that was previously complex and conflicting in his life.

Rationalisation and Incoherence.

Rationalisation is a coherent scheme, organised on the screen of consciousness, to fulfil the patient's deepest needs and wishes with regard to himself and life. Such rationalisations are liable to be maintained heatedly and defensively *because they are needed*. Hence the intensity and unchangeability of argument. The definite statement, "I am sure," is usually accompanied by a good deal of heat, which is the energy required to maintain the assumption in the face of considerable doubt. The tendency to systematise is best seen carried to its most pathological extent in the psychosis of paranoia, where the rationalised system is associated with the projection of a *feeling of persecution* on to the screen of objective reality. The stranger in the street who blows his nose is blowing his nose at "me," and the description of a murder in the paper is an accusation that "I" am guilty of the crime.

Systematisation is an unconscious tendency which is usually present, but it is lacking in those cases whom we regard as being *incoherent*. It is lacking at any rate in any form that we can understand, but we might say the same of a person who spoke to us in any foreign language with which we were not familiar. The incoherent ramblings of psychotics need to be regarded as an unfamiliar picture language, which we shall not understand until we can close our eyes to the familiar projections of our own system, and understand the unfamiliar pictures of the psychotic's world.

GOOD AND BAD ADJUSTMENT.

"What is truth?" We seem to be surrounded by illusions of our own creation and nowhere do we find reality. What is reality? Our difficulty in defining it should help us to be sympathetic and tolerant towards the illusory systems which others maintain to be their truth, and yet *realisation and acceptance of objective reality would seem to be our greatest safeguard in life*. The sufferers from mental disorders are those who have so far falsified reality in pursuit of wish-fulfilment that they have become lost in the quagmires of picture-thinking, transferred affects, and phantasy. Therefore we need, perhaps, to limit our conception of cure to the ideal of helping our patients to get back on to the hard road of *acceptance of the limitations of the facts of reality*, rather than to persuade them to accept or to achieve our own chosen goal.

In conclusion, some words of William Blake in his poem "Eternity," are apposite to the subject of wish-fulfilment:—

> "He who bends to himself a joy
> Does a winged life destroy;
> But he who kisses the joy as it flies
> Lives in Eternity's sunrise."

The two cases which follow are included in order to suggest that we need not always search deeply for unconscious motives in order to find the cause for mental disorder. Frustrated wishes on the conscious level may sometimes be enough to cause disintegration, but the symptoms which develop will be determined by individual differences of character.

CASE CC.—Female, aged 42, unmarried; mental nurse.
Complained of: Extreme depression, particularly associated with her periods. Lack of interest and concentration. Duration nine months.
History: She had always been a very conscientious worker as a nurse in a mental hospital where she had a very good character. There had been no previous history of depression, but she had been forced to leave her work because she could not carry on with it.

Nineteen years previously, after she had been engaged for a period of seven years to a man with whom she had been deeply in love, she had allowed herself to be seduced, with the result that she had a baby. Her emotional reaction towards the man was that she refused ever to see him again and she never afterwards took any interest in men, all of whom she regarded as cruel and wicked. She resumed her work as a nurse, the baby being boarded out, but she took a great interest in the child's welfare and provided the means for his support. Two months before her breakdown she had seen him off to Canada, having first given him every penny of her small savings. She said she felt that she was saying good-bye to everyone whom she cared for and who cared for her. *She stated that the whole of this story was quite unknown to anyone at the institution where she worked.*

CASE DD.—Female, aged 28, married.
Complained of: Depression, insomnia, impulsive outbursts of irrational behaviour. Ideas that people in the street were talking about her. Duration three months.
History: She had always been of a rather headstrong character and difficult to control. She had been successfully earning her own living before she married as a clerk in an insurance office. Three years previously her engagement had been broken off by the discovery that her fiancé was already engaged to someone else. Her pride was very deeply wounded and she felt that the other girls in the office were laughing at her. One of her employers, who was 30 years older than herself, had been taken into her confidence, and started to take her out to dinners and theatres and finally proposed marriage. She had no intention of accepting him but her family were very poor and her mother having been told of the opportunity, persuaded her to accept him, which she finally did. Within 24 hours she had decided to break it off again, but on returning to the office found it had been announced to the other girls, and she could not face being laughed at again for not knowing her own mind. Up to the last moment of her engagement she felt that she could not go on with it, but said that she was in a dream and she felt she could not turn back.

The man whom she married had previously lived for his whole life with his mother and sister, and he now took his young wife to live in the same household, expecting her to fit in with the old régime. This she refused to do and there were frequent domestic quarrels. After a year she had a baby upon whom she lavished intense, but not always wise, affection. A year later, after a period of severe emotional conflict, she commenced to feel that people were talking about her and nudging each other, and she began to develop insomnia until her final breakdown occurred.

THE SERVICES

ROYAL ARMY MEDICAL CORPS.

Lt. C. L. Day to be Capt.

ARMY RESERVE OF OFFICERS.

The undermentioned having attained the age limit of liability to recall, cease to belong to the Res. of Off.: Maj. D. P. Johnstone and Capt. L. Bousfield.

TERRITORIAL ARMY.

Capt. K. B. Dickson to be Maj.
Lt. F. Heywood-Jones to be Capt.
Lt. L. P. Clarke, Res. of Off., to be Lt.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Lt.-Col. H. F. W. Boeddicker, having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform.

INDIAN MEDICAL SERVICE.

Capt. A. I. Cox to be Maj.
Lt.-Col. H. B. Steen retires.

COOKING IN LIVERPOOL HOSPITALS.—At the annual meeting last week of the Merseyside Association of Hospital Contributors (Penny in the Pound) Fund, a resolution was passed declaring that "the improvement of hospital cooking is long overdue" and suggesting that "a trained dietitian for the local hospitals be appointed." The superintendent of the Southern Hospital, Liverpool, states that he has never had a complaint about food.

SPECIAL ARTICLES

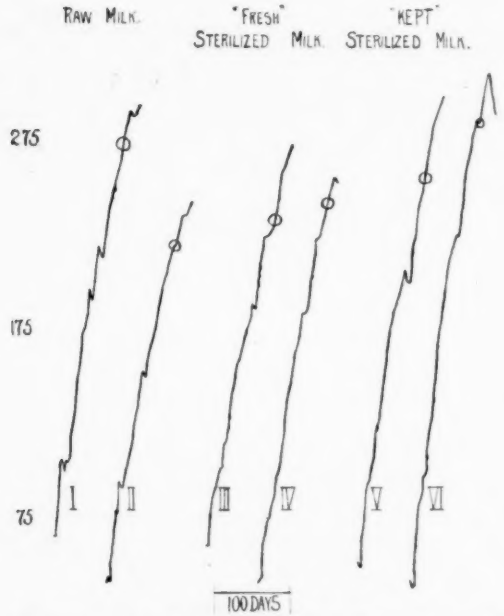
RELATIVE VALUE OF RAW AND HEATED MILK IN NUTRITION.

By Elfreida C. V. Mattick, M.Sc., Ph.D. Bristol,
and
J. Golding, D.S.O., F.I.C.

(From the National Institute for Research in Dairying, the University, Reading.)

For the past five years we have conducted experiments on the relative nutritional value of raw and heated milk. Our results show definitely that some dietetic factors are destroyed when milk is sterilised, and to a definite but lesser degree when it is pasteurised, and that, although with the method evolved fresh milk is capable of supporting sustained growth and reproduction in rats, heated milk is no longer capable of doing so. Our earlier feeding experiments on cats, kittens, pigs, rats, and calves failed to give such clear-cut results as the present series, chiefly because it was not possible, for various reasons, to continue the experiments for a sufficient time. All these animals thrive on milk for a considerable time, but never before have we been able to continue the feeding of our experimental animals

Fig. 1.

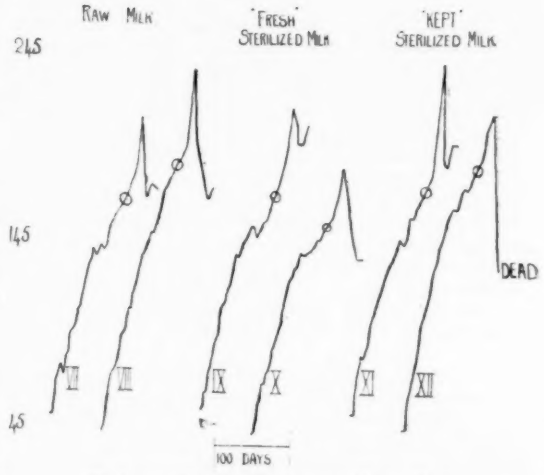


First experiment. Weight (in grammes) of six bucks of first generation. The circles indicate the time of mating.

to the fourth generation on an almost exclusive milk diet. Laboratory experiments published by one of us[1] demonstrate that at quite low temperatures changes take place in the diffusible calcium and in the action of rennet on milk. We had also noted that the enzymes are destroyed to varying degrees beginning with the lipase and following at higher temperatures with the peroxidase, while experiments on the vitamins indicate that vitamins C and B_1 are most susceptible to heat.

Before attempting to analyse the specific changes

Fig. 2.



First experiment. First generation. Does.

which may take place, we decided to investigate the nutritional significance of the sum of these changes, for until this has been demonstrated the relative importance of the components cannot well be determined. These experiments were designed to discover if the heating of milk caused the destruction of factors which were essential to continued growth and development of the animal organism through successive generations. In selecting the rat as an experimental animal we have probably reduced the sum of the nutritional effect by excluding the results attributable to deficiency of vitamin C.

At the beginning of this series we compared raw with sterilised milk, and only when we had devised a method capable of distinguishing between the nutritive values of these extremes did we include pasteurised milk, in which the changes are presumed to be less apparent.

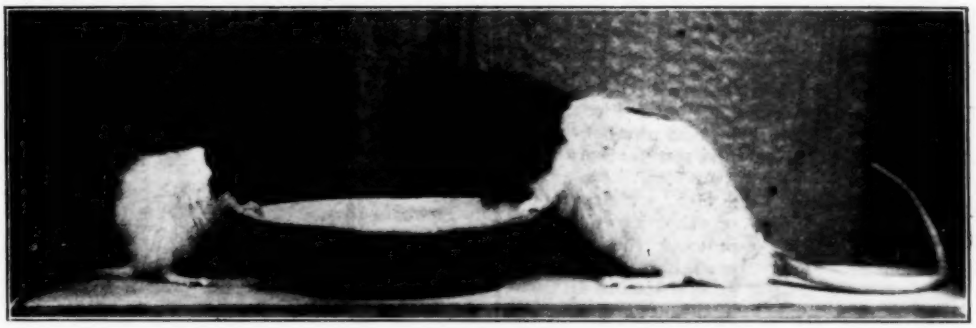
First Experiment.

The method finally adopted as a result of our previous experiments consisted in feeding milk ad libitum to the various groups of rats, the only other foodstuff being a "biscuit" made from English white flour and water, which after being well mixed was baked to a hard cake.

The milk used throughout was from a herd of tuberculin-tested cows, but was not produced under licence from the Ministry of Health. For the first series of experiments the milk each day was well mixed and divided into three portions. One portion was fed "raw." A second was sterilised by heating in a steamer for half an hour at 210–212° F. This was designated as "fresh" sterilised, and was fed the same day. A third lot was kept for 24 hours in a cold cellar, then sterilised at 210–212° F. for half an hour, and returned to the cellar for a further 24 hours before feeding. This was designated "kept"

[1] Mattick: Jour. Agric. Sci., 1929, xix., 454.

PHOTO 1.—*Second Generation on Raw and Sterilised Milk.*



♂ XV. ♂ XIII.

The small rat (buck XV.) fed on sterilised milk was 133 days old and the larger one (buck XIII.) fed on raw milk was 137 days old when photographed. Their weights were respectivly 74 and 268 g.

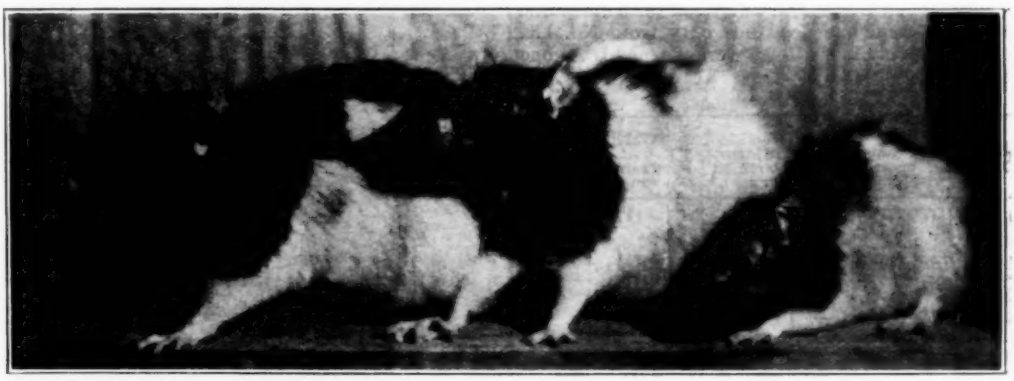
sterilised. This was done in order to bring the treatment more into line with commercially sterilised milk while still feeding the same milk as was given to the other groups. Our laboratory experiments had also indicated that the growth of organisms prior to heating, and the keeping of milk after heating, is not without influence on some of the resulting changes.

The 12 rats, which were used in the first experiment, which was started on July 26th, 1929, and is still continuing (March, 1931), were divided into three groups of four (two bucks and two does), each group being fed on the milk and biscuit as already described. Bucks and does were kept separately until mated. Every day the milk given was measured into open dishes, and allowed to remain in the cages until the following morning when the excess was determined. The cake given was in every case a

PHOTO 2.—*Fourth Generation on Raw Milk.*

Four of a litter of seven which weighed 325 g. when photographed at 43 days old. Coats and general condition are good and weights compare favourably with those of the previous generation.

PHOTO 3.—*First Generation on Raw, Pasteurised, and Sterilised Milk.*



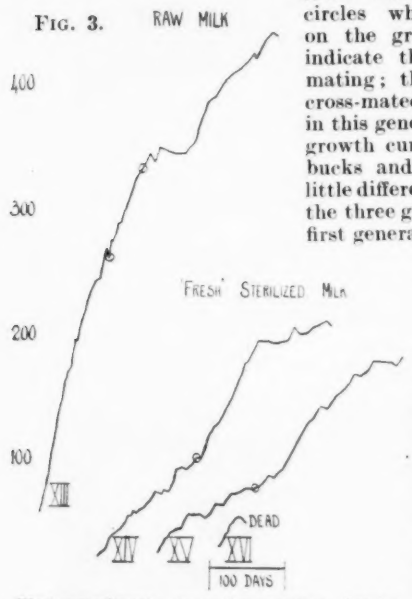
♂ I. ♂ X. ♂ XVIII.

Bucks fed respectively on raw (buck I.), pasteurised (buck X.), and sterilised (buck XVIII.) milk. Buck I. and buck XVIII. are litter brothers and were 276 days old while (buck X.) was 275 days old when photographed. Their respective weights were buck I. (raw milk) 356 g., buck X. (pasteurised milk) 304 g., buck XVIII. (sterilised milk) 136 g. The staring coat of the rat fed on pasteurised milk can be seen, while the generally poor condition of the one which has received sterilised milk is very noticeable.

weighed quantity gradually increased to 7 grammes for each adult rat. It was not possible by this method to get an accurate estimation of the weight of milk ingested, but it ensured that the rats were always *offered* more than they were likely to consume.

Fig. 1 shows the growth curves of the first generation of bucks in this experiment, and Fig. 2 that of the does. In each group the odd numbers represent rats from one litter and the even numbers those from another. The circles which appear on the growth charts indicate the dates of mating; the rats were cross-mated in all cases in this generation. The growth curves of both bucks and does show little difference between the three groups in this first generation.

FIG. 3.



First experiment. Second generation. Bucks.

RESULTS OF MATING.

As a result of the cross-mating already described all six does became pregnant. The does on raw milk, Nos. VII. and VIII., had respectively litters of 7 and 10 puppies. Of the 7, 4 were weaned at 25 days old (weighing 147 g.). Of the litter of 10, of which 9 were born alive and lived for 11 days, none was eventually weaned. If, however, we consider the number of days during which these does were lactating we find that the number of "lactation days" (number of pups × days of life) during suckling period was 232 days. This figure is of interest when considered in relation to the same factor in the other groups.

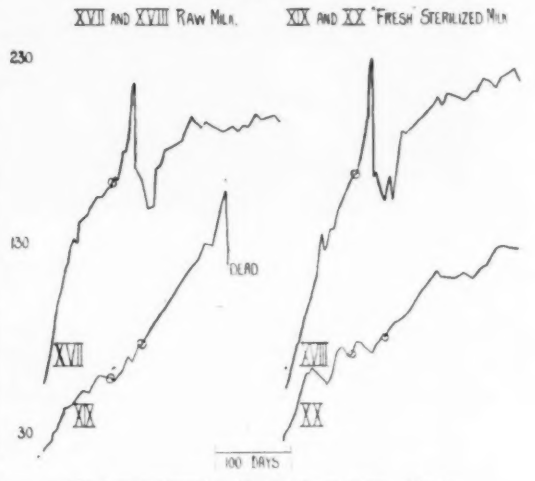
"*Fresh*" *Sterilised Milk*.—In the case of the two does on "fresh" sterilised milk only ten puppies were born, seven living and two dead ones from one doe (No. X.), and one dead one only from No. IX. Of these five (weighing 113 g.) were weaned from one litter, but the total number of "lactation days" for both does in this group was only 143.

TABLE I.

Type of milk.	No. of doe.	Pups born.	Born alive.	Weight of litter at birth in (gms.).	Weaned.	Weight at weaning (gms.).	Lactation days.
Raw ..	VIII. 7 VII. 10 } 17	7 9 } 16	34 46 } 80	4	147	232
Fresh sterilised	X. 9 IX. 1 } 10	7 —	41 4 } 45	5	113	143
Kept sterilised	XI. 2 XII. —	2 —	8 —	— —	— —	5 —

"*Kept*" *Sterilised Milk*.—Doe No. XII. on kept sterilised milk died from lung trouble before the litter was born. From a post-mortem examination it was found that 11 ova had been fertilised, but that the fœtuses had been dead for some time before the doe died. The other doe, No. XI., had two puppies, both of which disappeared three days later. The number of lactation days of these does, therefore, was not more than five. These results are given in Table I.

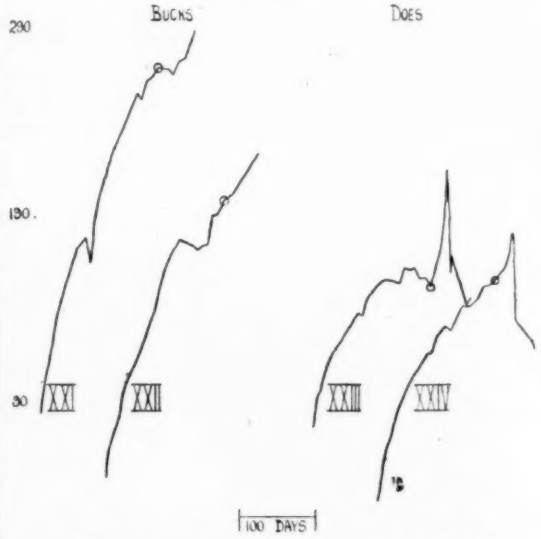
FIG. 4.



First experiment. Second generation. Does.

It is readily seen that although the actual number of puppies weaned was greatest in the "fresh" sterilised group, the number born alive, the weight at weaning, and the number of lactation days of the does were far greater in the case of the "raw" milk group than in either of the others, while no second generation was available in the group on "kept" sterilised milk.

FIG. 5.



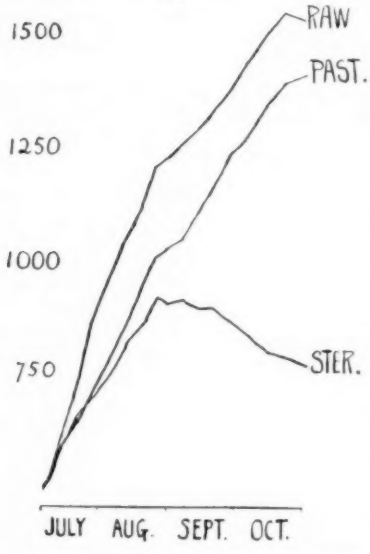
First experiment. Third generation on raw milk.

These results are accentuated in the second generation. The growth curves of the bucks and does of

this generation are shown in Figs. 3 and 4, and hardly need comment, since it is very obvious that those on raw milk are incomparably better than those on the "fresh" sterilised. This is confirmed by photo 1.

The results of mating are equally significant. In this generation it was necessary in both groups to mate litter brothers and sisters: buck XIII. was mated with does XVII. and XVIII., all on raw milk, and produced litters of seven and ten pups respectively, all of which were born alive and weaned, being the third generation fed entirely on raw milk and cake only. Buck XIII. was also mated with doe R (curve not given), who at the first mating had four pups, all of which disappeared, but at a second mating had a litter of nine, all of which were living, and were weaned. Only first-mating litters are considered, but actually this buck was the parent of 30 pups from four matings, of which 26 were weaned.

FIG. 6.



Second experiment. Total weights of bucks in each group.

Very different results were obtained with the rats on fresh sterilised milk.

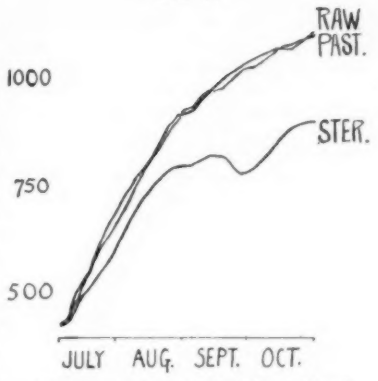
"Fresh" Sterilised Milk.—In the case of the raw milk the bucks were allowed to remain with the does for 16 days. With the "fresh" sterilised, they were not taken away until after 20 days, but as it was obvious that none of the does was pregnant, they were remated and allowed to remain with the does for about three months. At the end of this time doe XIX. had a litter of seven pups. All seven were dead by the following morning, only three were of normal size, and one was a freak. On the following day the doe was also dead. The other doe, No. XX., failed to show signs of pregnancy at any time.

TABLE II.—*Results of Mating the Second Generation Fed on "Raw" and "Fresh" Sterilised Milk.*

Type of milk.	No. of doe.	Pups born.	Born alive.	Weight at birth (gms.).	Weaned.	Weight at weaning (gms.).	Lactation days = pups × days suckled.
Raw	XVII.	7	7	40	7	194	175
	XVIII	10	10	49	10	197	250
	R.	4	4	19	—	—	—
	First mating						
Totals ..		21	21	108	17	391	425
Fresh sterilised	XIX.	7	7	—	—	—	—
	XX.	—	—	—	—	—	—

The photograph of the bucks of this second generation (raw and fresh sterilised milk) shows the remarkable difference in the general appearance and size of these in the two groups. (Photo 1.)

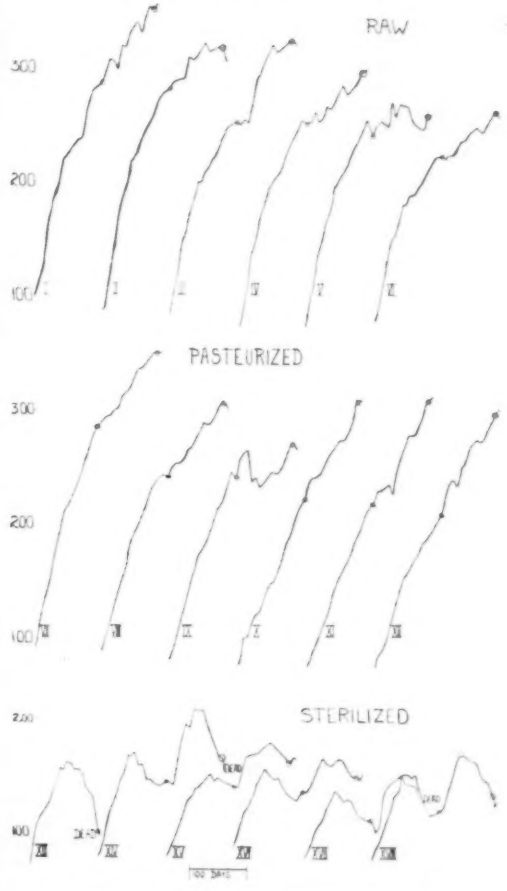
FIG 7.



Second experiment. Total weights of does in each group.

Third Generation on Raw Milk.—Six does and four bucks of the third generation on raw milk were kept for breeding purposes, their diet remaining exactly similar to that of the previous generation. No comparison with a group on sterilised milk can be made, since no third generation was available. Growth curves of two bucks and two does, Nos. XXI. to XXIV., are shown in Fig. 5. Cross-mating was arranged, and 20 pups of the fourth generation have been weaned from three does.

FIG. 8.



Second experiment. First generation. Bucks.

Forty-five pups were born from six does, of which all but eight were alive. There are no growth curves available yet for these fourth generation rats, but one litter of seven, which at one day old weighed 38 g., had increased to 210 g. when weaned at 27 days old, so that as far as can be judged at present there is no falling off in the growth-rate of the fourth as compared with the third generation on this diet. Photo 2 shows four of this litter at 43 days old when their total weight was 325 g.

It is proposed to keep some members of this fourth generation in an endeavour to determine the number of successive generations which can be raised on this particular diet.

Second Experiment.

Encouraged by the results of the first experiment it was decided to start another on a larger scale, substituting a group on "pasteurised" milk for the one previously receiving "kept" sterilised milk.

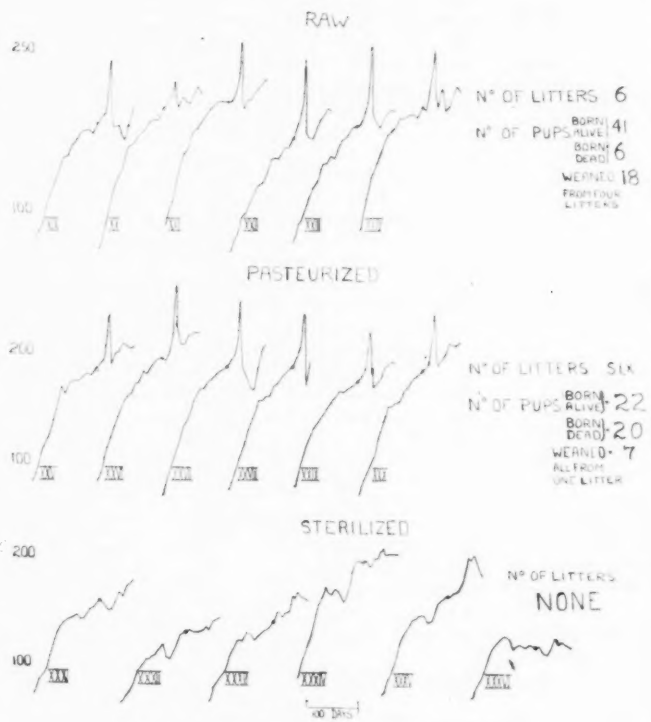
Thirty-six rats were taken from seven litters and were from 25 to 29 days old when placed on a milk diet. For 13 days they all received raw milk and "biscuit" only, and at the end of this time the specific feeding was started. The milk was of the same quality as that used in the previous experiment. On being brought to the laboratory one part remained untreated, a second was "pasteurised," and a third was "sterilised."

The milk for pasteurisation was poured into a vessel fitted with a lid through which the spindle of a mechanical stirrer and a thermometer were passed. When closed the can was placed in a water thermostat, and the milk was mechanically stirred until removed from the thermostat for cooling. Records were made of the time taken for the milk to reach 145° F., the temperature variations during the half hour of heating, and the time and temperature of cooling, this last being carried out by standing the can in a vessel of water at about 60° F., and passing water at the same temperature continuously through this vessel until the milk was cooled.

Two hundred and thirty-six records of these factors show that on 224 occasions out of 236 between July 8th, 1930, and Feb. 28th, 1931, the temperature of the milk reached 145° F. in from five to nine minutes, on the remaining 12 occasions the longest time taken was only 12 minutes, so that the milk was never subjected to any prolonged preheating, which may be an important factor when considering the effect of pasteurisation on milk constituents. The temperature of pasteurising was never below 145° F., nor above 149° F., while the temperatures of cooling varied between 56° F. and 68·5° F., and the time taken to reach these temperatures was never more than nine nor less than four minutes.

The sterilised milk was treated in the manner already described in the previous experiment. Unlimited quantities of milk were fed as before and the "biscuit" was the only other food given.

FIG. 9.



Second experiment. First generation. Does.

The increase in total weight of the three groups of rats is shown in Figs. 6 and 7 from the beginning of the experiment on July 8th, 1930, until mating on Nov. 3rd, 1930. At the beginning of the experimental period the total weights of the bucks in the three groups were: raw 488 g., pasteurised 480 g., and sterilised 486 g. At the time of mating these weights had become: raw 1538 g., pasteurised 1412 g., and sterilised 763 g.

The weight curves for the does show the following results. At the beginning of the experiment the total weights were: raw 430 g., pasteurised 431 g., and sterilised 423 g., which by Nov. 3rd had become raw 1106 g., pasteurised 1100 g., and sterilised 897 g. It is interesting to note that the effect of pasteurisation upon the growth factor of the milk seems to be demonstrated more clearly by the bucks than by the does, while the effect of sterilisation is very marked both on bucks and does. The differences in weight in the individual rats are clearly shown in the growth curves given in Figs. 8 and 9.

It will be seen from Fig. 8 that three of the six bucks on "sterilised" milk have died during the course of the experiment; one of them exhibited typical signs of vitamin B_1 deficiency.

The appearance of the rats on raw milk was excellent, those on pasteurised milk, although generally well grown, had rather staring coats, while the coats of the group on sterilised milk were very staring and their general condition was very poor. (See Photo 3.)

RESULTS OF MATING.

The rats were cross-mated on Nov. 3rd and all the does in both the "raw" and "pasteurised" milk groups became pregnant, but none of the six in the "sterilised" group showed signs of pregnancy, neither were any litters born to them. The results of mating are shown in Table III.

Recently the bucks and does on sterilised milk have been mated for a second time. Buck XIV., mated to two does, died a week later. The others were allowed to remain with the does for three weeks. It is interesting to note that none of the does showed signs of pregnancy.

TABLE III.

Treatment of milk.	Litters.	Pups.	Alive.	Weaned.	Lactation days = pups × days suckled.
Raw ..	6	47	41	18*	524
Pasteurised .	6	42	22	7†	169
Sterilised ..	—	—	—	—	—

* From four litters. † From one litter only.

Summary.

A method is described by means of which it is demonstrated that raw milk with biscuit, made only from white flour and water, is capable of sustaining the growth and reproduction of rats. A fourth generation on this diet at the time of writing is as healthy and normal as the previous generations. Sterilised milk fed under similar conditions failed to sustain life and reproduction, beyond the first generation except on one occasion, when a second generation of very stunted animals was produced. Even the original rats (the first generation) failed in many instances to reach maturity.

Preliminary experiments with pasteurised milk demonstrate results sufficiently marked to indicate that milk heated at a temperature of 145–149° F. for half an hour has undergone changes which have considerably reduced its dietetic value. The factors which are destroyed will form the subject of a future communication, but there are indications that the partial destruction of vitamin B_1 must be included in the number.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

THE MEDICAL CURRICULUM.

Sir Norman Walker, President of the Royal College of Physicians of Edinburgh, presented prizes at the annual ceremony in St. Mungo's College, Glasgow, last week. In his address he pointed out that with the ever-increasing amount of knowledge, either a longer hospital education or a longer curriculum must be faced in the near future. In some of the United States every graduate, before receiving a licence to practise, was required to serve for 12 months as a hospital interne. Sir Norman's opinions are being voiced in other quarters, and recently the Students' Representative Council of Edinburgh University passed a recommendation for consideration by the authorities, recommending an increase in the medical course.

TREATMENT OF TUBERCULOSIS.

At a meeting of the Royal Victoria Hospital Tuberculosis Trust last week Sir Robert Philip pointed out that there has been a great improvement in the death-rate from tuberculosis in all its forms; to-day it is only a third of what it was in 1887. The work of the Trust was, he said, a national one, and it was necessary to take both wide and long views: one must think not in terms of a year but in decades and generations. The child was the important person in this disease, and it was in childhood that the best therapeutic results were to be expected; so the committee had resolved to erect a special pavilion for children at Southfield Sanatorium Colony. The Trust were not content to accept the view that anything less than tubercle-free herds of cattle should be aimed at because of the difficulties and expense; pasteurisation could not be accepted as the one solution of the milk-supply of the country. An appeal for help was made by the Trust, as their extension at Southfield this year would discharge £7000 from their capital. Further, the Trust were eager to obtain a sufficient endowment to ensure an annual expenditure of £6000 to £8000 on research for the next five years at least.

HOSPITAL MEETINGS.

The Earl of Home, presiding at the forty-eighth annual meeting of the Governors of the Royal Hospital for Sick Children, emphasised the value of the institution in training doctors for research work in the diseases of children. It was proposed, he said, to instal a completely equipped orthopædic department as a centre of organisation for carrying on this work in Glasgow and the West of Scotland. The hospital's county branch was reopened last autumn, and it was estimated that 1000 children would be treated each year; the financial side was also satisfactory, as the year closed with a substantial balance on the right side. Mr. William Adamson, M.P., who seconded the report, mentioned that 5247 patients had been treated in the wards, and there were 89,103 attendances as out-patients.

At the annual meeting of the Hospital Sunday Fund at Glasgow, the invaluable assistance rendered to the hospitals of the city was emphasised. The aggregate for the year amounted to £9392 which is only £379 less than last year, a very satisfactory result considering the great depression. Lord Provost Kelly, who presided, said that the Fund tapped sources of income which would not otherwise be approached, and pointed out the tremendous value of small donations.

Dr. William Muir, who died on March 12th, was one of the best known medical men in Davidson's Mains and the surrounding district. He graduated at Glasgow in 1888 and held the Menteith bursary. He held a number of official posts in the county, having acted as parochial medical officer for Cramond, and medical officer to the Cramond School Board. He was also a Justice of the Peace for the county of Midlothian.

The death has occurred at Greenock of Dr. James Laurie. For a long period he was leading surgeon at Greenock Royal Infirmary, and during nearly 50 years of practice he had gained an honoured place in his profession. During the war he gave valuable service in the large military hospital which was established in Greenock.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

AN IRISH PHARMACOPŒIA.

LAST week the Government introduced to the Dail a Bill to establish a pharmacopœia for the Irish Free State. Fortunately, no attempt is being made to compile a rival pharmacopœia to the British Pharmacopœia. The Bill provides that the British Pharmacopœia for the time being, subject to such modifications as may be made by the Medical

Registration Council of the Irish Free State, shall be the pharmacopœia of the Irish Free State. The Medical Registration Council is empowered to make modifications either by deletion or addition. The Bill further provides that it shall not be lawful for any persons to compound medicines of the Irish Free State Pharmacopœia, except according to its formularies. Contravention of this provision renders the offender liable to a fine of £10. It appears that there has been some doubt as to whether the British Pharmacopœia, though generally recognised, had a legal status as standard in the Irish Free State, and the legislation now promoted is intended merely to regularise the position. The British precedent of putting the official Pharmacopœia under the control of the Medical Registration Council is followed. This arrangement is, no doubt, convenient, but neither in Great Britain nor in Ireland is the Registration Council a body officially suitable to compile or control a pharmacopœia.

THE NEED FOR CLEAN MILK.

Many people in the Irish Free State who are interested in health are becoming a little uneasy in regard to the legislation introduced in 1929 to safeguard the milk-supply. It is noted that although a Bill dealing with the matter was introduced more than a year and a half ago, it has not been advanced any further. It is well known that the Bill was regarded with hostility by the farming and milk-dealing interests, and it is feared that the dilatoriness of the Government is not entirely due to pressure on Parliamentary time. At the annual meeting of the Royal National Hospital for Consumption last week, the President of the Royal College of Physicians of Ireland commented on the fact that the tuberculosis death-rate in Ireland was still very high, and that the improvement that had so far taken place was mainly in regard to pulmonary tuberculosis. He drew attention to the long delay in legislation designed to lessen the dangers arising from the milk-supply, and remarked that, while the Government had found time to introduce legislation intended to open the public-houses on St. Patrick's Day, it had not yet found time to deal with the milk-supply.

AUSTRALASIA.

(FROM OUR OWN CORRESPONDENT.)

UNDULANT FEVER IN AUSTRALIA.

AT a recent meeting of the Medical Science Club of Sydney Dr. A. H. Tebbutt reported the first indigenous case of undulant fever in New South Wales. Two indigenous cases had been previously reported from Victoria by Drs. W. J. Penfold and H. M. Butler.[1] The first report of this disease in Australia was by Dr. T. Storie Dixson in 1908[2] and was of foreign origin. Dr. Tebbutt's patient was a farmer aged 51 years, who was in the habit of handling aborting cattle. Contagious abortion is present in cattle in the district where he resides, but is unknown in horses and pigs. The main clinical features were a gradual onset with malaise, loss of appetite, prolonged fever with headache accompanying the evening rise, and the absence of other symptoms. Examination of the blood at about the fifth week showed that there was no agglutination of *Bacillus typhosus* or *paratyphosus* A or B. All *Br. abortus* strains were agglutinated with serum dilutions down to 1 in 640, but *Br. melitensis* only down to 1 in 80.

[1] Med. Jour. Austral., May 31st, 1930, p. 702.
[2] Australas. Med. Gaz., Jan. 20th, 1908, p. 23.

AN AUSTRALASIAN ASSOCIATION OF PHYSICIANS.

An association, called the Association of Physicians of Australasia (including New Zealand) has been formed, its object being the advancement of internal medicine and the promotion of friendship among physicians. Its membership is limited to not more than ten associate members resident in New Zealand, and at first, not more than 70 ordinary members who should be physicians actively engaged in the teaching of medicine, men of distinction in medicine and the allied sciences, or physicians recognised by the council as eligible. Two meetings will be held each year, excepting Congress year, when only one meeting will be held. These meetings will be held alternately in Sydney and Melbourne, or from time to time at the discretion of the council, in Adelaide. New members will be admitted only on election by ballot at the annual general meeting. Any member who is absent without special leave from three consecutive meetings shall cease, ipso facto, to be a member of the Association, except in the case of New Zealand members.

The idea of the Association originated in Melbourne and was first promulgated at a gathering of physicians during the Australian Medical Congress in 1929. As a result of this informal discussion, a meeting was called in Melbourne in June, 1930, when a number of senior physicians from Sydney and Melbourne decided to found the new body on the lines of the Association of Physicians of Great Britain and Ireland. The first meeting of the new society took place in Sydney in November, 1930. Sir Richard Stawell was elected President and Dr. Sydney Sewell hon. secretary. Sir Henry Maudsley and Dr. R. Scott-Skirving were elected honorary life members, and a number of new members were admitted. The day was spent in scientific discussion.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

CALMETTE'S REPLY.

IT was said of one of your statesmen, Gladstone, I believe, that he was terrible on the rebound. At a meeting of the Academy of Medicine on Feb. 24th, Calmette was caught on the rebound, and his counter-attack drew general applause. On his own proposal a commission of 12 was appointed to sift the evidence of doctors and midwives in France who have employed B C G since 1924. He insisted that the immunity conferred by the vaccine on cattle is only temporary; hence the advice to reinoculate every year. Many animals had been given six inoculations in the course of six years, but there had not been a single case in which B C G could be suspected of having provoked an extensive and virulent tuberculous lesion. From the bodies of 300 inoculated children who had died of various diseases, B C G had been recovered and reinoculated into susceptible animals; in no case had it been possible to demonstrate the least virulence for the guinea-pig. Referring to the observations of Dreyer in THE LANCET of Jan. 3rd, Calmette declared that he had never considered it impossible to discover a technique which might reverse the process he and Guérin had employed and turn B C G back into virulent tubercle. Anthrax vaccines could be converted by laboratory devices into an anthrax virus, the virus of rabies attenuated by passage through a monkey could be rendered more virulent by passage through a rabbit. If a similar transformation could be effected in the

case of B C G, what argument would this be against prophylactic inoculation with it? If B C G was dangerous, what sense in limiting its use to the less resistant offspring of tuberculous parents? If innocuous, why withhold it from infants who, though to-day living in healthy surroundings, might to-morrow be exposed to infection?

VENEREAL DISEASE PRIZES.

Two prizes are being offered in the campaign against venereal disease, one national, the other international. The National League will give two sums, each of 3000 francs, to the authors of the best original works on venereal disease. Candidates must send in their theses to the League at 44, rue de Lisbonne, Paris, before Oct. 1st, 1934. The other prize, of 5000 francs, will be awarded by the International Union for the best design to serve the campaign against venereal disease in the way the double cross of Lorraine serves the International Union against Tuberculosis. French candidates are asked to send their designs to the general secretariat of the Office National d'Hygiène Sociale, 26, Boulevard de Vaugirard, Paris, before May 1st next.

AN EFFECTIVE HEALTH FILM.

Dr. Louis Devraigne's film entitled *Le Voile Sacré* has been shown in the grand amphitheatre of the Sorbonne by Prof. Couvelaire, where it has made a most favourable impression. The true test of its popularity is of course yet to come. The central character is the young girl from the country, intelligent and enthusiastic. She learns the true meaning of "social service," an activity so essentially Anglo-Saxon that the term has been taken over without translation. The heroine returns to her modest niche in the country, and here we find her reforming everyone and everything, efficiently but unobtrusively. Dr. Devraigne is chief medical officer of the maternity department at the Lariboisière.

By a unanimous vote of its members, the *Conseil Supérieur d'Hygiène* has decided to put a stop to the use of certain chemicals in bread. This decision affects particularly bromine derivatives which, it is alleged, have had an injurious effect on consumers.

The Paul Ehrlich gold medal for 1931 has been awarded to Prof. Levaditi of the Pasteur Institute for his work on the chemotherapy of syphilis.

CORRESPONDENCE

THE IRRADIATION OF SCHOOL-CHILDREN.

To the Editor of THE LANCET.

SIR,—There is nothing we desire less than to prolong controversy with our old friend and colleague, Sir Leonard Hill. Our former letter was written to make clear what he now accepts, as we felt sure he would—namely, the responsibility of the M.R.C. Light Committee, and his own in special measure, for the "location of the school" and the "details of the test" in the Willesden experiment. His dissatisfaction with the result, however, finds vent in another imputation. The Light Committee, he suggests, and ourselves, as shown by our former letter, favoured an "official view" or "dogma," as to "the equivalence of ultra-violet radiation to the administration of vitamin D." "Equivalence" was, perhaps, not a strictly accurate word; but Sir Leonard Hill, at least, knows what we meant. It had been proved that ultra-violet radiation could replace administration of vitamin D, and the mechanism of its action in this case was known. The question before the Committee was whether ultra-violet radiation, in particular, contributed to health in other ways than this. So far from accepting any official dogma, or the views of any "European, American, or British authority on artificial light treatment," they decided, as scientific men, to try to put the matter to the test of a controlled experiment. The Willesden experiment was planned for this purpose, and the Committee, being satisfied that it had been so devised as to give a clear answer to this limited question, were prepared, as scientific men, to accept the result. If they had refused to accept it because it was negative, they could properly be accused of favouring a dogma.

We are, Sir, yours faithfully,

H. H. DALE.
S. R. DOUGLAS.

The National Institute for Medical Research, Hampstead, March 14th, 1931.

To the Editor of THE LANCET.

SIR,—In their letter to THE LANCET of March 7th Dr. Dale and Captain Douglas sought from Sir Leonard Hill an acknowledgment of his share, as a member of the Medical Research Council's Light Committee, in the planning of the inquiry into the effect of irradiation on the health of school-children carried out in Willesden in 1928. It is satisfactory to see that in his reply in THE LANCET of March 14th Sir Leonard admits that he "agreed with the location of the school . . . and the details of the test." Since, however, the routine of dosage to be used was an important "detail," it is disconcerting to find that Sir Leonard suggests now, as he did in his paper in THE LANCET of Jan. 24th, that the children may have been overdosed. In my report [1] I discussed the question of dosage, but I think it may be advisable to restate certain facts.

It may be recalled that the 300 children were divided into three groups, two of which were irradiated, the one by a naked arc, the other by a similar lamp from which practically all the ultra-violet rays were cut off; the members of the third group served as controls.

1. The system of dosage was planned after careful consideration of the methods used under similar conditions in many light clinics in which successful results were attributed to the irradiation. In these clinics a considerable variety of strong and weak doses were used, and there appeared to be no clear relationship between the degree of irradiation given and the results claimed. The recommendation made to the Committee and adopted by them, therefore, was that a middle course should be followed in the Council's inquiry, and, in fact, doses were given which were quite moderate in intensity, as judged by the available standards.

2. The doses were carefully graduated from start to finish in the hope that while the children were under daily observation some indication might be gained of the relative effects of smaller and larger exposures. No significant evidence was obtained. The maximum dose mentioned by Sir Leonard Hill was reached only towards the end of the period when, after weeks of exposure, the skins of the children must have acquired considerable tolerance to the rays.

[1] Medical Research Council, Special Report Series No. 131.

3. It may be confidently stated that the ultra-violet-irradiated children showed no evidence of harm in general health as compared with those of the screened lamp group, as judged by doctor and nurse, or by teacher and parent.

It is justifiable to speculate on the explanation of the negative results. For instance, the ultra-violet rays may be without effect in those particulars to which the test was directed; the doses used may have been too small; or they may have been too large, so that any beneficial effect was masked by a harmful effect in the individual child; or the response may have been such that the number of children benefited was balanced by the number harmed. In my opinion we are not yet in a position to decide to which of these or other causes the negative results should be related. In view, however, of the claims of other workers with very varied doses, it is at least unjustifiable to attribute them simply to overdosage.

I am, Sir, yours faithfully,

DORA C. COLEBROOK.

Northway, N.W., March 15th, 1931.

BARBITURATES AS BASAL HYPNOTICS.

To the Editor of THE LANCET.

SIR,—Will you permit me to comment upon your leading article last week (p. 595) entitled Accessories to Anæsthetics. I have been, to a large extent, responsible for the introduction in this country of Nembutal as a basal hypnotic in anæsthesia, and I feel that the shadow of doubt cast upon the newer barbiturates in this article is not altogether justified. It is true that the barbiturates, as a whole, are still on trial in connexion with anæsthesia, at any rate, in Great Britain, but as pointed out by me in a previous article,[1] the clinical evidence already collected is sufficient to permit definite conclusions to be drawn on the advantages and limitations of these drugs.

At the Mayo Clinic for example in the year 1929, barbiturates were employed in over 2000 anæsthetics,[2] and the same figures hold good for the year 1930. I am informed on good authority that nembutal continues to be extensively used at that clinic. I have used nembutal consistently for the past six months whenever a basal hypnotic has been desirable and intravenous administration capable of being carried out. I continue to be pleased with the results, particularly in patients who have had previous unhappy experiences before and after general anæsthesia. To say that undesirable symptoms often occur after nembutal is, to me, an exaggeration. The restlessness referred to may be observed after avertin, or even after ether. A visit to the out-patient clinic of any general hospital during the recovery period of children operated upon for tonsils and adenoids will confirm this. I agree, however, in the need for caution, and I pointed out in my article that a drug of such potency as nembutal should be employed to produce basal hypnosis by expert anæsthetists, and then only when indicated. It is obvious that if nembutal is followed by a badly administered general anæsthetic, or possibly even by clumsy surgery, it is unfair to lay the blame for any untoward result on nembutal alone.

The method of administration of nembutal seems to me to be of the greatest importance in arriving at correct dosage for basal hypnosis. Barbiturates vary widely in their action on different individuals, and nembutal is no exception. For this reason I believe it is unwise to attempt to obtain anything more than a pre-operative or post-operative sedative action, and this can be obtained with comparatively small doses. The definite production of basal hypnosis with nembutal should be reserved for cases in which intravenous injection is possible. If intravenous injection is impracticable or undesirable and basal hypnosis is desired, it is better to use other agents less variable in action.

The whole question of basal hypnosis is a matter of increasing importance. The protection from physic trauma and the lessened amount of anæsthetic required are advances which aid the scope of the surgeon. At present no single agent is capable of satisfying all requirements, but by a careful contribution of various agents it is already possible to produce satisfactory results in average cases.

I am, Sir, yours faithfully,

Wimpole-street, W., March 16th, 1931. I. W. MAGILL.

[1] THE LANCET, Jan. 10th, p. 74.

[2] Proc. Staff Meetings, Mayo Clinic, vol. vi., No. 2, p. 27.

CEREBRO-SPINAL FEVER.

To the Editor of THE LANCET.

SIR,—In connexion with the increasing incidence of cases of cerebro-spinal fever, I note in your issue of March 7th (p. 555) a statement by Dr. Burton, medical officer of health for Ilford, that it is regrettable that at the present time type meningococcal sera for diagnosis are not available in this country. This statement is inaccurate as far as the Army is concerned. Type sera for purposes of diagnosis are manufactured at the Royal Army Medical College and have been constantly available for Army bacteriologists. These sera have, of course, been employed in the present outbreak. As an exceptional measure, owing to the emergency of the epidemic, supplies have in addition been issued to several civilian laboratories.

I am, Sir, yours faithfully,

H. MARRIAN PERRY,
Lieut-Colonel, R.A.M.C.

Pathological Department, R.A.M. College, Grosvenor-road, S.W., March 16th, 1931.

"POISONING" IN ERODE.

To the Editor of THE LANCET.

SIR,—I notice in your issue of Jan. 31st under Notes from India that an account in the *Times of India* is quoted which describes "an extraordinary case of poisoning in Erode." The "account," which covers 12 lines in your paper, contains the following inaccuracies. It states: (1) That an outbreak of poisoning occurred recently in the London Mission, Erode. (2) That the outbreak was in connexion with the London Mission High School. (3) That 45 students died. (4) That the deaths occurred immediately after a meal. (5) That a cook also died. (6) That the outbreak was reported to be due to an aranai in the students' soup. (7) That the bite of the aranai is said, in the Tamil country, to cause instant death. And in the paragraph following this account you state, (8) that the sequel to this fatality has not been reported.

As to these statements, (1), (3), (4), and (5) are merely untrue. (2) The school referred to is an upper elementary school. There is no Mission High School in Erode. (6) No statement was made by any responsible person, or by any person who saw

the sick boys, to the effect that the outbreak was due to poisoning. The report that an aranai had been found in the food emanated from the Erode bazaar, the gossip spread to the towns and villages around, and was sent to the press from a town 40 miles from Erode. (7) The aranai is a harmless lizard, but there is a superstition in the Tamil country that its lick is poisonous and will cause leprosy. It is difficult, however, to understand how an aranai that had been boiled in soup could either bite or lick. (8) A contradiction of this poisoning rumour, with the true facts of the cholera outbreak which actually occurred, was cabled to England on Dec. 8th and was published in the *Times*, *Daily Mail*, and other papers on Dec. 10th and in the Indian papers on the same date.

The truth is that cholera broke out in the community (upper elementary) school of the London Mission, Erode, on Dec. 3rd, 1930, and 32 boys succumbed to the disease during the five days following the first attack. Clinically the attacks were those of cholera of a most virulent type and cholera vibrios were recovered from the motions of patients and convalescents. It was unfortunate that the rumour as to poisoning, which was mere bazaar gossip, obtained such wide publicity. One wonders how much of the "news" about India which is sent home every day and accepted without question is equally unreliable.

I am, Sir, yours faithfully,

H. M. POLLARD,
Medical Officer London Mission Hospital, Erode.

Feb. 23rd, 1931.

*** The report in question was, as stated, quoted verbatim from the *Times of India*. It was stated in the original paragraph that the deaths occurred shortly after a meal, and this, if true, must have precluded any question of disease, however virulent. Our correspondent's comments show that he did not accept the account of the tragedy at its face value, but presumed that it would be a case for further inquiry.—ED. L.

OBITUARY

DAVID HEPBURN, C.M.G., M.D., F.R.S.Edin.,

EMERITUS PROFESSOR OF ANATOMY, CARDIFF.

WE regret to announce the death of Dr. David Hepburn, Emeritus Professor of Anatomy, University College, Cardiff, which occurred at his residence in Cardiff on Monday, March 9th, in the seventy-third year of his age.

David Hepburn was born in Milnathort, Kinrosshire, the son of a veterinary surgeon, and was educated at Brand's School, Milnathort, and at the University of Edinburgh. He graduated as M.B., C.M., with honours in 1881, and during 1882 he held resident appointments in the Royal Infirmary at Edinburgh. He was next appointed demonstrator of anatomy in the University and from 1885 to 1903 was the principal demonstrator and lecturer in regional anatomy in the University. In 1891 he proceeded to the M.D., securing the Beaney Prize in anatomy and surgery. He held the Edinburgh post until he went to Cardiff as professor of anatomy, thus starting the work with which he will always be associated, for he held the post until 1927, and when he retired his tenure of office had been extended for three years beyond the usual age-limit. From the moment he went to Wales he identified himself in an exceptional way with the new and growing school of medicine which was coming into existence. He became the first Dean of the Faculty of Medicine, a post he filled until 1922, after the Welsh National School of Medicine had been established as an integral part of the University College at Cardiff, with a full curriculum qualifying for the medical degrees of the University of Wales. Previously no clinical teaching was undertaken; during this period Hepburn's influence as a teacher and administrator contributed greatly to that development and success of the School which laid the foundations for its later expansion and recent creation as a separate school within the University. As a teacher he possessed personality, and that individual touch which establishes connexion between students and professor; hence he could impart knowledge and hold the interest of his listeners. He was aided by the possession of a clear, resonant voice and a faculty for making a felicitous and humorous speech at a moment's notice. His popularity was undoubted; and many are his old students who to-day will be recalling him to mind with affection and esteem. He devoted himself whole-heartedly to their interests and rendered valuable service to the cause of education. He encouraged and fostered such societies as the Medical Students' Club, of which he was oft-time President, and the College Choral Society, by energetic participation in their activities.

At the outbreak of the war in 1914, Hepburn who, six years earlier, on the formation of the Territorial General Hospitals, had been appointed to command the 3rd Western Hospital, showed considerable ability in organising both the work of the institution and its many auxiliary services; indeed, he found in military organisation an opportunity for working along lines which he enjoyed. During the whole duration of the war, and for the ten following years, he was a member of the General Medical Council, where his practical experience in medical education was valued by his colleagues. At his own University and the University of Edinburgh he held examinerships in connexion with the faculties of science and medicine, while he was an examiner in anatomy at different times to the English Conjoint Board and to the Universities of Oxford, Liverpool, Leeds, and Sheffield. His official appointments were numerous, for he had been president of the Anatomical Society of Great Britain and Ireland, of the Edinburgh Physical Society, of the Scottish Microscopical Society and the Cardiff Medical Society, and vice-president of the Scottish Natural History Society.

On his final retirement the title of Emeritus Professor was conferred upon him in recognition of conspicuous services to the College. He remained at Cardiff and continued as member of the Board of Medicine and of Committees to help on by his experience the work of others. Throughout his time in Wales he supported the institutions of the Principality. He served with zeal the Priory for Wales of St. John's Ambulance Association, in the establishment of which he played a prominent part, and was a Knight of Grace of the Order of St. John of Jerusalem. He was not a profuse writer, but none the less made some interesting communications to the literary needs of his subject and wrote the section on Arthrology in the 1913 edition of Cunningham's Anatomy.

He married Mary, the eldest daughter of Mr. J. I. Carson, of Hillside, Annan, Dumfriesshire, by whom he had one son and one daughter.

NAMES OF LONDON PUBLIC ASSISTANCE HOSPITALS. The St. Pancras (South) Hospital, the Hackney Branch Home, Brentwood, and the Edmonton Epileptic Colony are to be renamed St. Pancras Hospital, Brentwood Colony, and Edmonton Colony respectively.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS.

PHARMACY AND POISONS BILL.

IN the House of Lords on March 12th the Pharmacy and Poisons Bill was discussed on a motion for the second reading.

Lord Ponsonby explains the Bill.

LORD PONSONBY (Parliamentary Secretary to the Ministry of Transport), in moving the second reading, said the Bill was the outcome of a Report of a Departmental Committee set up by the last Government. The general effect of the existing law was contained in the various Pharmacy Acts dating back to 1852. The substances and preparations treated as poisons for the purposes of the Acts were scheduled as such by Order in Council upon the resolution of the Council of the Pharmaceutical Society. The retail side of all poisons and preparations containing a poison was reserved to registered pharmacists, except in the case of poisons required for certain purposes in agriculture and horticulture, which might be sold by persons licensed by the local authority. The local authority was required to take into consideration whether in the neighbourhood the reasonable requirements of the public in respect to the purpose of the poisons in question were satisfied. The expression "reasonable requirements" had led to a good deal of dispute. The sale of poisons by retail was required to be in accordance with certain statutory provisions in regard to records and labelling. The enforcement of the law lay with the Pharmaceutical Society, and the penalty was obtained by an action civil in form, and was paid to the Society. There was practically no regulation of the wholesale sale of poisons or the manufacture of medicinal preparations containing poison.

DEPARTMENTAL COMMITTEE'S REPORT.

That having been the case, it was decided to hold an inquiry by a Departmental Committee who found that the existing law under which the practice of pharmacy and the sale of poisons were mixed up was extremely complicated, very largely obsolete, and not adapted to modern requirements. The progress made in the application of science to industry and social and domestic life had rendered some of the provisions relating to the sale of preparations containing poison unnecessarily restricted. On the other hand, in certain respects the present control over the sale of poison and poisonous substances was far from adequate. As a result of these facts, and partly because the administration and enforcement of existing Acts lay with an unofficial society with insufficient resources, the control by the law, such as it was, was not being enforced. The existing machinery for determining what substances were to be treated as poisons was felt to be unsuitable and not in harmony with modern practice. It was felt that a non-official association, whose members had a direct financial interest, and which did not represent all the interests affected, while it could properly deal like other professional associations with the discipline of its own members, was not the right body to regulate matters affecting large sections of the public; and it was felt that the best scientific, medical, and administrative experience should be made available in regard to matters immediately bound up with the health and safety of the public.

DRUGS AND POISONS.

The law required that these matters should be administered by a Minister, responsible to Parliament. The administration of the Dangerous Drugs Act and the long succession of cases of murder by poison and accidental death from poison had shown the necessity of precision in defining the legal requirements with regard to poison and of greater care in enforcing them; and there was a strong demand from the agricultural and horticultural community that the law should be altered so as to allow firms and co-operative societies which supplied their general needs also to supply them with such substances as sheepdips and insecticides. The Departmental Committee, apart from representatives of the Government departments concerned, included the President of the General Medical Council, Sir Donald MacAlister; a prominent toxicologist, Sir William Willcox; the Chief Parliamentary Counsel, the Assistant Government Chemist, and three representatives of pharmacy. The Report of the Committee was practically unanimous. There was a minority Report by one member and also a reservation.

The Bill transferred in Clauses 13 to 18 the duty of determining which were to be treated as poisons, and of administering the law, including the making of regulations, from the Pharmaceutical Society to a Minister responsible to Parliament—the Home Secretary. The Home Secretary would be assisted and guided by a Poisons Board composed of technical experts, representatives of medicine and pharmacy, and the representatives of Government departments. The Bill provided for the establishment of a new poisons list consisting of two parts—the poisons which might only be sold retail by registered pharmacists, and poisons which might not only be sold retail by registered pharmacists but also by other persons or firms. These latter firms would have to be registered by the local authority which would not have the power to refuse to register, except on the ground that the applicant himself was unfit or that his premises were unsuitable. The sale of poisons under Part II. of the Bill in the second part of the list would be controlled by regulations drawn up by the Poisons Board, and the control would be more effective than at the present time. The poisons dealt with in Part II. of the Bill would in the main be poisonous preparations sold in sealed containers and bearing appropriate warnings which were or should be in general use for sanitary, industrial, domestic, horticultural or agricultural purposes, or as vermin killers. There was an important new power given by regulation or by rule to prohibit the sale, except on the prescription of a registered medical practitioner, of certain medicinal substances of a specially dangerous character. Leading examples of such substances were veronal, and other drugs in the same group, which were much in vogue for inducing sleep. Numerous deaths and suicides had been due to the use of these drugs. The need for this reform was strongly urged before the Committee and had been frequently recommended by coroners.

THE POISONS BOARD.

The Bill also provided that rules might be made by the Secretary of State, after consultations with the Poisons Board. The constitution of the Poisons Board provided that there should be a representative of the Home Office, the Scottish Office, two representatives from the Ministry of Health, one from the Ministry of Agriculture and Fisheries, one Government Chemist, five representatives of the Pharmaceutical Society, one representative of the Royal College of Physicians, one representative of the Royal College of Physicians of Edinburgh, and one representative of the General Medical Council. There might be a few additional members. In case it should be felt that the Secretary of State was assuming bureaucratic powers he would explain that this was not a new power; the Act of 1868 gave power to the Pharmaceutical Society to make regulations as to keeping dispensaries and the selling of poisons, subject to the consent of the Privy Council. The Act of 1908 gave power to His Majesty by Order in Council to make regulations on a number of points connected with the

sale of poisons not being forms of poison required for agricultural or horticultural purposes. He could quote quite a number of other Acts of Parliament where the Secretary of State or the head of the Department in question was given power to make regulations under an Act. The Secretary of State could not be said, in this or in any other connexion in this Bill, to have an absolutely unfettered discretion, because he had to consult the Committee and to be consulted by the Committee, and he would necessarily, especially in the case of such an expert Committee, take their advice. Only very rarely would the Secretary of State act without the full concurrence of this expert Committee. As time went on modifications or additions would be required as new discoveries were made and new substances were put on the market. Rules could be laid before Parliament and would be subject to annulment by Parliament. At present there was no legislative control whatever over the manufacture of pharmaceutical preparations containing poisons, although it was becoming increasingly the practice for the compounding of medicinal preparations to be done by the wholesaler and not in the chemist's shop. There was a case on record where two children were poisoned by "calomel" pills found later to contain strychnine. It was discovered that the pills were made by two labourers under no qualified supervision in a shed in which preparations containing strychnine were also compounded. The Bill enabled rules to be made for requiring the manufacturing of such preparations to be under the control of a registered pharmacist, or other qualified chemist. One of the objects of the Bill, and the rules under it, would be to make it more difficult for persons to obtain poisons for criminal purposes without much fear of detection. Dealers by wholesale as well as by retail would be required to keep proper records, and would be subject to supervision. Clause 3 also provided for the registration of the actual premises and the Bill in Clause 20 simplified the procedure for the recovery of penalties.

PRACTICE OF PHARMACY.

Important alterations were made by the Bill in the existing law relating to the practice of pharmacy. Provision was made for the strengthening of the representative character, and the disciplinary powers of the Pharmaceutical Society. Every registered pharmacist was made a member of the Society while leaving the Privy Council as the central authority for the pharmaceutical profession as it already was for the professions of medicine and dentistry. The Bill strengthened the Privy Council's relationship with the Society by giving it power to nominate three members of the Council of the Society. This was very necessary in view of the wider powers to be given by Statute to the Council of the Society in regard both to the control and the protection of the Society. The whole status of the Society was raised, while its powers were extended and its power of supervision increased. At present there was practically no disciplinary power over the profession of pharmacy. A pharmacist could not be removed from the register for misconduct except in a case of a conviction for an offence against the Pharmacy Act. The Bill provided for the Statutory Committee to be appointed by the Council of the Society with a Chairman of legal experience to be appointed by the Privy Council before which the case of any pharmacist guilty of a criminal offence, or of any conduct which rendered him unfit to be on the register, could be brought, and which would have the power, subject to an appeal to the High Court, to remove him from the register. The aim of the Bill was to increase the status of the profession of pharmacy, and to maintain a high standard in the profession, and it was manifestly in the public interest that that should be done. There were still points of detail outstanding, which the Government hoped might be adjusted, and they were ready to put down amendments on the Committee stage. Negotiations had taken place with the County Councils, who, he understood, were also satisfied. Lord Dawson had put down a motion for the rejection of the Bill. He (Lord Ponsonby) hoped that was not on account of any main principle. If it was on any details the Government would, of course, be prepared to listen very attentively to such an authority as the noble lord if he had any suggestion to make.

Lord Dawson moves its Rejection.

LORD DAWSON, in moving the rejection of the Bill, said the measure aimed at making many important changes affecting both the practice of medicine and the practice of pharmacy, both of which had close relationship with the public weal. The provisions of the Bill had been drawn up without anything approaching a consultation with the medical profession who, as a natural consequence, were affected by the Bill. Those people who were responsible for having drafted the Bill were experts in their own callings, but they had ventured to put together this Bill without consulting the people who really knew. Lord Ponsonby had stated that the Pharmaceutical Society had been consulted. He (Lord Dawson) would point out that medicines were prescribed by and the handling of poisons mainly rested with the medical profession. Of the distinguished members of the Departmental Committee there was only one practising physician. Practising physicians comprised roughly three-quarters of all the doctors of the country, and their lordships would realise that one member was not a very adequate representation. That would not have mattered if wise steps had been taken later. It was true that the Departmental Committee did listen to witnesses and did hear two Fellows of the Royal College of Physicians, but when it had completed its report it proposed very considerable changes which involved the dispensing of drugs and the question of poisons.

Before the department concerned sought to put these provisions into a Bill and present them to their lordships' House one would have thought that it would have occurred to them to have taken conference with representatives of the medical profession, with the Royal Colleges, with the British Medical Association, with those recognised authorities that had to do with the care of the sick and the health of the nation. No such conference was held, and this Bill was presented to their lordships without the approval of the medical profession at all. The Department responsible for this Bill which concerned large matters of health was the Home Office. If the Ministry of Health had had charge of the Bill there would have been a little more justification, because on the staff of the Ministry of Health there were gentlemen who apart from their intrinsic abilities had some knowledge of the day to day practice of medicine. But on the staff of the Home Office there were few medical men, and although they were men of high standing in their own domain, they knew nothing of the practice of medicine. Yet these were the people who were to have the last word in advising the Secretary of State as to what was right or wrong in the handling of the difficult questions of drugs and poisons. The point of view of the Home Office on the matter of drugs was that of criminal intent and drug addiction, and extremely well they did it, but the most important question in the matter of drugs did did not concern that small fraction of the population who were given to addiction or who had criminal intent. Drugs and poisons in their day to day use concerned the general health of the nation, and therefore should be considered by those who gave up their lives to the study of these very intricate subjects.

DRUGS AND POISONS.

They could not, said Lord Dawson, separate drugs from poisons. With the modern development of medicine the number of medicines prescribed by medical men became fewer in total, but the medicines were prescribed with a much more precise knowledge of their composition. That was due to the very satisfactory progress of pharmacological science. The result was that a large proportion of the drugs

used were potential poisons, and that the same substance which was wholesome if given in the proper dose became a poison if given in excess. For instance, strychnine, morphia, heroin, and a large number of new sleeping draughts, so necessary in our modern life, such as veronal, aspirin, and medinal, had come into use owing to the high pressure of civilised life. But these drugs given in excess became poisons. Therefore no distinction could be made between a substance which was a drug and a substance which was a poison in the large majority of cases. It therefore came to this, that in deciding very intricate questions as to whether particular drugs should be put into the scheduled list, there were highly technical and difficult questions which could only be decided by those who were intimately associated with the specialised knowledge of clinical medicine, with the specialised knowledge of pharmacy, and with the specialised knowledge of chemistry. That had been met up to now not at all badly, for the constituted authority under the present law was the Pharmaceutical Society. On the whole, the Society did their work very well because they were skilled, though he did not deny that they could make that body better by adding to those skilled pharmacists one or two skilled chemists and a representation of skilled hospital physicians. The Bill proposed to take the administration of poisons from this expert body, which had properly a very considerable discretion as to how it should act, and transfer it to the Secretary of State who was to be advised by a so-called Advisory Committee. He would show that the Advisory Committee was a sham. The Secretary of State had power to do almost anything. The real authority in regard to poisons would be transferred to permanent officials at the Home Office, for no Home Secretary could know anything about the technicality of poisons, and he would be subject to advice of officials who knew nothing about clinical medicine and whose point of view was really confined, and very ably confined, to people who were drug addicts, or who had criminal intent.

THE POISONS BOARD.

The Poisons Board could consist of 18 members. It would be an out and out bureaucratic body. Most of the members would have very little knowledge of the subject, and the people really concerned with the care of the sick, the medical profession, would have little or no power. A body which had been working for years most satisfactorily under the control of the Privy Council, and which consisted of expert pharmacists (strengthened he hoped in due course by expert doctors) were to be replaced by this extraordinary body which aimed at centralising all power inside the Home Office. That was a very bad provision, and if the Home Office had condescended to have consulted the medical profession before issuing this Bill there might have been no difficulty in convincing them that the right people to manage technical affairs were people with technical knowledge.

Lord PONSONBY said the Report of the Committee with the Bill attached had been out for a year and two months, and no comment had been made until the noble lord's speech that day by the medical profession.

Lord DAWSON said that that did not in the least alter the fact that the Bill had been issued without consulting the people most concerned, the people who possessed the knowledge. Time after time measures were brought forward without proper consultation with the medical profession. Although it was quite true that this Bill had been out for some time it should not have been brought forward at all without such a conference as he had suggested.

PRACTICE OF PHARMACY.

They all wished to see an improvement in pharmacy, but if the people who knew something about pharmacy had been consulted the provisions of the Bill would have been far better. He would supply one instance. It was part of the law that insured persons should have their medicines prescribed by doctors and dispensed by registered pharmacists. That was very proper, but by some curious anomaly if a patient was not an insured person no such protection was given. If he (Lord Dawson) wrote a prescription he had no power to demand that it should be dispensed by a registered pharmacist. That matter had not been put right in this Bill, which showed how completely foreign the subject was to the people who had ventured to try to put the Bill together. From that example, their lordships could judge many others. If they looked at medical history they would find that in the fourteenth century it was laid down that no medicines were to be dispensed except by a registered apothecary. This country was behind in these matters. No medicine should be dispensed except by registered pharmacists or under the supervision of a doctor. The right policy for the Government to pursue should not be concentration and centralisation, which simply meant mechanical government, but rather the delegation of those difficult problems to autonomous bodies, as had been done with broadcasting, and as he believed the present Government intended to do with transport. That was the right course to take with this difficult question of drugs and poisons. This Bill traversed the sound principle of Government, and for the reasons he had stated he asked their lordships to reject the measure. He was not against the improvement of the profession of pharmacy. It was part of the policy of the medical profession to bring together these ancillary callings and to raise their status; but how could that be done except by people acquainted with what was needed on the educational and administrative side? If by agreement a suitable measure could be produced, as he had little doubt it could, he was not against change as such, but it must be an improvement and not something like this Bill, which was nothing but a studied reaction.

FURTHER CRITICISM.

Lord ASKWITH endorsed the motion of Lord Dawson for the rejection of the Bill unless the Government could show that it was possible to extend it in such a way as to give that wider scope for what was aimed at by both the medical profession and the Pharmaceutical Society. If the Bill was confined to poisons alone he was informed that the Bill was quite worthless. It would not deal with such subjects as vaccine, thyroid glands, sera, &c., which unless looked after grew old and stale and possibly poisonous. Also there should be elasticity by which new substances which might be invented, or become poisonous in the estimation of scientific authorities, in the future could be included in the poisons list.

The Earl of ONSLOW said that the points raised against the Bill could be met in committee. He therefore recommended their lordship to give the Bill a second reading with a view to improvements being made in committee.

Lord STRACHIE supported Lord Onslow's suggestion.

The Earl of HALSBURY said that if the Government would give the House an assurance that they would consider with a certain amount of favour before the committee stage some amendments of the Bill he would not oppose the second reading, but otherwise he would support the motion of Lord Dawson.

Viscount LEVERHULME said he supported what Lord Dawson had said about the desirability of the medical profession being consulted in regard to a Bill of this kind.

Lord COZENS-HARDY said that in his view this Bill was one of the worst examples of Departmental usurpation. He strongly supported the stand which Lord Dawson had taken, and he hoped that Lord Ponsonby, realising the force of the arguments which have been advanced, would see his way to agree to modify the Bill to meet Lord Dawson's objections. If that were done he (Lord Cozens-Hardy) would vote for the second reading.

Lord Ponsonby Replies.

Lord PONSONBY, replying to the debate, assured the House that the Government intended to take into account all bodies of opinion closely concerned with this question of the sale and control of poisons. He thought that Lord Dawson was perhaps a little unfair in saying that no attempt had been made to consult the medical profession, because after all Sir Donald MacAlister must be regarded as a very high medical authority and he was on the Depart-

mental Committee. The Committee's Report with the Bill had been published now for over a year, and the Government and the authorities of the Home Office would have been only too glad to have had close consultations with high medical authorities in the same way as they had had consultation with the Pharmaceutical Society. The noble lord's fear that the Home Secretary's power of overriding the opinion and advice of the Committee, the constitution of which he strongly disapproved of, was hardly justified. If the matter was left to the Secretary of State with Parliamentary sanction as well, it seemed to him that the control would be far greater than if it was delegated to some private body who could act without the public being aware of its decision. Lord Askwith had raised the question of extending the Bill to such things as vaccine, sera, and thyroid extracts. No inquiry had been instituted into that branch of the subject, and the Government felt that it was not advisable to go beyond the actual question of poisons. That was the only point on which the Government could not accept any extension or amendment of the Bill. With regard to all the other points raised—the constitution of the Poisons Board, the exact power of the Secretary of State to override decisions, or to use an unfettered discretion, the Government would be open to consider amendments in Committee and would give due weight to the expert opinion in their lordships' House. Naturally the opinion of such a high authority as Lord Dawson carried so much weight, that the Government would not dream of going forward feeling that he was in opposition even though a Division had been taken in which the Government had secured a majority. It would be unsatisfactory on a technical Bill of this sort to have any division of opinion at all. If Lord Dawson would agree, he (Lord Ponsonby) would suggest that before the Committee stage a full consultation should be held with representatives of the medical profession. It might be possible, for instance, for the Registrar of the Royal College of Physicians to get together a representative body who could consult with the officials of the Home Office and with those who would be responsible for the further stages of the Bill. The Government would postpone the Committee stage until Thursday, March 26th. Beyond that he could not go, because unless the Bill could be sent to the House of Commons before Easter its prospects of passing into law this session would be very remote.

Lord ASKWITH said that he was told that this Bill was worthless unless such matters as vaccines, thyroid glands, and sera were introduced within the power of the Poisons Board. Could Lord Ponsonby give an indication that a speedy inquiry would be set up to see whether an amending Bill could be brought in to include those substances?

Lord PONSONBY said that that was a suggestion which could be considered later.

Lord DAWSON said that it was very difficult for him to promise that such a conference as had been suggested by Lord Ponsonby could be held with any chance of success in dealing with so comlex a question within the limits of a fortnight. He would do his best to see if it could be done, but he must express grave doubt whether he could do it.

Replying to Viscount BERTIE OF THAME, Lord PONSONBY said that he thought that the Government would have to proceed with the Bill whether the proposed conference came to anything or not before March 26th.

The Bill was read a second time and committed to a Committee of the whole House.

YARMOUTH NAVAL HOSPITAL BILL.

In the Committee stage of the Yarmouth Naval Hospital Bill in the House of Lords on March 10th Viscount MERSEY moved an amendment making Subsection (1) of Clause 5 read as follows: "The Admiralty may, on such terms as to payment and otherwise as they may think fit, receive into Yarmouth Hospital as a voluntary patient any such person as is desirous of voluntarily submitting himself to treatment for mental illness and who makes a written application for the purpose to the Admiralty." Lord AMULREE accepted the amendment on behalf of the Government, and it was agreed to. Viscount MERSEY also moved a new clause designed to allow persons who might have been wronged to bring action on a bona fide cause of complaint. This, too, was accepted by the Government, and on Thursday, March 12th, the Bill was read the third time and passed.

UNIVERSITY CONSTITUENCIES: GOVERNMENT DEFEAT.

IN the House of Commons on March 16th the representation of the People Bill was further considered in Committee. Sir R. YOUNG was in the chair. On Clause 4 (Abolition of University Constituencies) Mr. Ross moved to leave out Subsection 2. He explained that the effect of the amendment would be to allow the Queen's University, Belfast, to continue to return a Member to Parliament. After discussion the amendment was defeated by 178 votes to 168. The Committee then discussed an amendment moved by Lord HUGH CECIL to delete Clause 4 from the Bill altogether. After a lengthy debate, the amendment was carried by 246 votes to 242—majority against the Government, 4.

MENTAL TREATMENT RULES.

Mr. GREENWOOD (Minister of Health) moved the following resolution in the House of Commons on March 16th:—

"That the Mental Treatment Rules, 1930 (Statutory Rules and Orders, 1930, No. 1083), dated Dec. 30th, 1930, and made by the Board of Control, with the approval of the Lord Chancellor, under Subsection (1) of Section 338 of the Lunacy Act, 1890, as extended by Subsection (1) of Section 15 of the Mental Treatment Act, 1930, which were presented on Jan. 20th, 1931, be approved so far as they modify or adapt any of the provisions of the Lunacy Act, 1890."

After discussion the resolution was agreed to.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 11TH.

First-aid Outfits in Motor Coaches.

Mr. SORENSEN asked the Minister of Transport whether he would consider compelling proprietors of motor coaches to have first-aid outfits carried on their vehicles.—Mr. HERBERT MORRISON replied: I have this point under consideration in connexion with the further regulations which will shortly be made dealing with the use and equipment of public service vehicles.

Persons Found Dead in London Streets.

Mr. OLIVER BALDWIN asked the Home Secretary how many men, women, and children had been found dead in the streets of the metropolitan area during the first two months of the present year.—Mr. CLYNES replied: The numbers of persons found dead in the streets and public places of the metropolitan police district during the months of January and February, 1931, are as follows: men, 85; women, 30; children under 16 years of age, 2; newly-born infants, 12; total, 129.

Medical Officers in the Air Force.

Lieut.-Colonel FREMANTLE asked the Under-Secretary for Air the total establishment of medical officers in the Air Force and the shortage of regular medical officers on the establishment in each year since the war.—Mr. MONTAGUE replied: The following table shows the figures required in respect of the years for which statistics are available:—

Year.	Establishment.	Deficiency.	Year.	Establishment.	Deficiency.
1920	142	29	1926	210	51
1921	141	50	1927	204	40
1922	177	55	1928	204	26
1923	197	65	1929	205	28
1924	213	68	1930	210	39
1925	219	70	1931	210	46

These deficiencies of regular officers have been made good

to a substantial degree by the engagement of doctors on contract, either on a commissioned or on a civilian basis.

THURSDAY, MARCH 12TH.

Vaccination and Encephalitis.

Mr. LEACH asked the Minister of Health whether, in view of the recommendation given on page 72 of the last report of the Rolleston Committee on Vaccination in regard to the use of antivaccinal serum to mitigate the dangerous encephalitic effects of vaccination, which showed that, notwithstanding the improved methods of performing the operation which had recently been introduced, it was still impossible to guarantee that it would not be followed by nervous complications of a serious character, he would either cease to enforce the operation or compensate the parents in cases where dangerous results arose.—Mr. GREENWOOD replied: I have no power to suspend or vary the provisions of the Vaccination Acts, which do not provide for the payment of compensation in such cases as my hon. friend mentions. I may, however, point out that the compulsory requirements of the Acts are in effect limited to infants under 12 months of age, and that in this class the occurrence of post-vaccinal encephalitis has been practically negligible.

The Dumping of Town Refuse.

Lieut.-Commander KENWORTHY asked the Minister of Health whether he could make any further statement about the prevention of the dumping of town refuse by certain municipalities, or contractors acting for them, in the open country, especially in certain districts around London; and how many local authorities now disposed of refuse by incinerating.—Mr. GREENWOOD replied: I have pressed the metropolitan authorities to discontinue insanitary dumps, and action has been taken or is contemplated by a number of them. Some authorities in the neighbourhood of London have made by-laws under which precautions can be enforced to prevent any nuisance from refuse tips. Returns for the year 1928–29 from 216 of the larger urban authorities show that 138 (19 being in London) incinerated part or the whole of their refuse.

Tuberculosis among Dairy Cattle.

Mr. LONGBOTTOM asked the Minister of Health if he had considered a resolution of the Halifax county borough council requesting that, owing to the high incidence of tuberculosis among dairy cattle, he would amend the Milk and Dairies Acts of 1915 and 1926 so as to confer on local authorities the power to make compulsory the notification of all cattle arriving in their respective areas within 48 hours of arrival; and would he arrange to introduce legislation to meet this request.—Mr. GREENWOOD replied: I have received this resolution from the councils of several county boroughs, and will consider it in consultation with my right hon. friend, the Minister of Agriculture and Fisheries.

Medical Benefit Regulations.

Sir KINGSLEY WOOD asked the Minister of Health if he had taken any steps recently, by regulations or otherwise, to afford further protection to the National Health Insurance funds against abuse; and if he proposed to take any further action.—Mr. GREENWOOD replied: Yes, Sir. Two important changes in the medical benefit regulations have already been made, the first with reference to the transfer of insured persons from one doctor to another, and the second with reference to lax certification. I am also proposing, at an early date, to issue to all insurance doctors a memorandum, and to all approved societies a circular, giving the results of the recent investigations into the increase of sickness and disablement benefit claims and advice on medical certification and the supervision of claims respectively.

Nutritional Value of Milk.

Brigadier-General CLIFTON BROWN asked the Minister of Health whether he would arrange for a study to be made of the relative nutritional values of the different types of milk on sale, either by the Medical Research Council or by the committee which the Government had recently set up to study the nutrition of the nation; and whether the research experiments of the Dairy Research Institute at Shinfield in that direction would be carefully considered.—Mr. GREENWOOD replied: I will consider the hon. Member's suggestion.

MONDAY, MARCH 16TH.

Medical Treatment in Poor-law Institutions.

Mr. WARDLAW-MILNE asked the Minister of Health whether the Government would consider introducing legislation to remove the disqualification which inmates of a workhouse or other poor-law institution suffered as a result of being admitted on account of destitution and subsequently receiving medical treatment, which led to the practice of such persons leaving the institution for one day and being readmitted as medical cases.—Mr. HAYES (Vice-Chamberlain of the Household) replied: The answer is in the negative.

Local Authorities and Slum Clearance.

Mr. O'CONNOR asked the Minister of Health how many local authorities had failed to prepare a slum-clearance scheme and a five-year housing policy; and what proportion that represents of all local authorities.—Mr. GREENWOOD replied: Programmes for the next five years have been received from 268 of the 290 urban authorities representing populations over 20,000 who are required by the Act of 1930 to submit such programmes; 183 of these definitely contemplate the provision of houses for the replacement of unfit houses, and the total number of houses to be so provided in the five years is 103,680.

Boys Killed in Coal-mines.

Mr. COVE asked the Secretary for Mines the number of boys, aged from 14 to 16, employed in British coal-mines; and the number of fatal and non-fatal accidents, respectively, occurring in the age-group in 1930.—Mr. SHINWELL replied: At Dec. 31st, 1930, the number of boys under 16 years of age employed in Great Britain in and about mines under the Coal Mines Act, 1911, was approximately 36,900, and the number of such boys killed during 1930 was 30. I regret that particulars of the number of boys injured are not yet available.

Child Marriages in India.

Miss RATHBONE asked the Secretary for India whether, in view of the suspension of the civil-disorder movement in India, it was now the intention of the Provincial Governments to commence enforcing the Sarda Act in restraint of child marriage.—Mr. WEDGWOOD BENN replied: The enforcement of the Act has in no way been affected by the civil-disobedience movement.

Medical Services in India.

Lieut.-Commander KENWORTHY asked the Secretary for India, in view of the fact that on all previous occasions when increments in pay and pension had been sanctioned by the Secretary for India these were given without distinction to both military and civil officers of all branches of the Army, including the Indian Medical Department, why the 1929 revised rates of pay for the Indian Medical Department had been sanctioned for those in military employ only, and had not been given to those loaned for civil medical employment in the provinces; whether he was aware that, although the Madras Government had sanctioned the increased rates of pay to its civil Indian Medical Department officers, the other provinces, as also the State railways and the Government of India, had refused it to their Indian Medical Department civil medical officers; why such distinction had been made in the Indian Medical Department; and whether he was prepared to take steps to inquire into the matter and remedy this position.

Also whether, seeing that the Indian Medical Department (Military Assistant Surgeon Branch) was an all-India service under the administration of the Government of India and the control of the Secretary of State as regarded pay and pensions, he would state whether its officers were recruited in all cases under the same terms of agreement, and whether it was a cadred service; and, seeing that those of its officers whose services were loaned to Provincial Governments were, like similar Indian Medical Service officers, considered as the war reserve of the Army (Indian Medical Department), would he consider giving them equal treatment with similar Indian Medical Service officers.—Mr. WEDGWOOD BENN replied: The assumption on which the questions are based are not quite accurate. Although the Indian Medical Department has a definite cadre, it is not an all-India service like the Indian Medical Service. Military assistant surgeons are attested as soldiers under the Army Act on first appointment. While they are in military employ their conditions of service are governed by Army regulations; but on transfer to civil employ they come under the control of the civil authorities, who have full power to determine their rates of pay. So far as I am aware, there is some degree of competition for civil employ, and the conditions of service are well understood. In the circumstances I do not feel justified in suggesting to the civil authorities an increase in the rates which they have decided are adequate.

Medical Officers in the Air Service.

Lieut.-Colonel FREMANTLE asked the Under Secretary for Air the number of medical officers on the establishment of the Air Service, and the average strength of medical officers

in each of the last five years.—Mr. MONTAGUE replied: The following table gives the figures required:—

MEDICAL OFFICERS, ROYAL AIR FORCE.

Year.	Establishment.	Average strength.	Deficiency.
1926	210	184	26
1927	204	181	23
1928	204	188	16
1929	205	188	17
1930	210	190	20

The strength figures include medical officers serving on contract either on a commission or a civilian basis.

TUESDAY, MARCH 17TH.

Naval Medical Officers.

Lieut.-Colonel FREMANTLE asked the First Lord of the Admiralty the total establishment of naval medical officers and the shortage of regular medical officers on the establishment in each year since the war.—Mr. AMMON (Parliamentary Secretary to the Admiralty) replied: Consequent on the continuation of the employment of temporary medical officers who had served during the war and the transfer to the permanent list of a certain number of such officers, no shortage of naval medical officers was experienced up to and including 1922. The shortages in subsequent years as compared with requirements, which include provision for officers undergoing courses, have been as follows:—

Year.	Requirements.	Shortage.	Year.	Requirements.	Shortage.
1923	416	24	1927	402	21
1924	395	2	1928	402	12
1925	397	7	1929	396	24
1926	392	2	1930	399	44

Coöperative Societies and Insurance Prescriptions.

Sir KINGSLEY WOOD asked the Minister of Health when he proposed to make the regulation which would permit coöperative societies to make a monetary payment to their customers in respect of national health insurance prescriptions.—Miss LAWRENCE (Parliamentary Secretary to the Ministry of Health) replied: My right hon. friend understands that certain legal proceedings have been instituted in this matter, and he would therefore prefer at the moment not to make any statement on the point raised by the right hon. Member.

Housing in Scotland.

Mr. DUNCAN GRAHAM asked the Secretary for Scotland whether he could give any estimate of the average proportion of income spent in house rent in the areas which had been or were being the subject of slum-clearance schemes in Hamilton.—Mr. ADAMSON replied: I am informed by the Town Clerk of Hamilton that as a result of a local investigation in April last, it was estimated that the average proportion of income spent on rent (including occupiers' rates) was 11·5 per cent. in respect of the particular slum area investigated, which comprised over 400 houses.

Mr. WESTWOOD asked the Secretary for Scotland, seeing that the medical officer of health for Midlothian had declared that 711 houses were required to meet the deficiency of houses in the county and that the county council had only agreed to provide 140 houses during the next three years, what action he proposed to compel the county council to deal with this situation.—Mr. JOHNSTON replied: My right hon. friend is aware of the estimated deficiency stated in the hon. Member's question. The Department of Health for Scotland have made representations to the County Council of Midlothian as to the inadequacy of their proposals for the erection of houses during the next three years, and have asked them to consider the erection of a much larger number of houses than the number at present proposed. On receipt of the County Council's reply, the question as to what further action, if any, should be taken will be considered.

Cerebro-spinal Fever.

Mr. FREEMAN asked the Secretary for War the date on which each sufferer in the Army from cerebro-spinal meningitis was taken ill this year; the date of death or when released from hospital; and the date when each person was last vaccinated, and Mr. GROVES asked how many cases of cerebro-spinal fever had occurred amongst soldiers in this country during the present year; and how many of the cases proved fatal.—Mr. T. SHAW: The information is as follows: Table showing the dates of (*a*) admission to hospital, (*b*) death, where it occurred, (*c*) last vaccination, in the case of soldiers, their families &c., who have been admitted to hospital suffering from cerebro-spinal fever during the present year up to March 12th.

A. = Date of admission to hospital in 1931.
B. = Date of death in 1931.
C. = Date of last vaccination.

A.	B.	C.	A.	B.	C.
Jan.	Jan.		Feb.	Feb.	
7 ..	— ..	June, 1927.	16 ..	18 ..	Jan. 22, 31.
28 ..	30 ..	May 1, 30 (failed).	18 ..	— ..	Nil.
		June 13, 30 (re-vacc.).	18 ..	— ..	Nil.
			19 ..	24 ..	†
	Feb.		20 ..	— ..	May 8, 30.
30 ..	7 ..	Feb. 13, 30.	20 ..	— ..	Nov. 18, 30.
Feb.				Mar.	
1 ..	— ..	Jan. 8, 30.	20 ..	4 ..	Aug. 26, 30.
1 ..	3 ..	Apr. 9, 30.	21 ..	— ..	Feb. 1, 31.
3 ..	— ..	Jan. 16, 31.		Feb.	
3 ..	6 ..	May 30, 30.	21 ..	21 ..	†
3 ..	4 ..	At 3 mths. † May, 1928.	22 ..	25 ..	†
			26 ..	— ..	Aug. 20, 30.
4 ..	9 ..	Mar. 7, 29.	28 ..	— ..	Apr. 6, 29.
4 ..	— ..	Jan. 13, 27.	Mar.		
4 ..	5 ..	Mar. 25, 30.	8 ..	— ..	Apr. 23, 29.
7 ..	10 ..	Sept. 11, 29.	8 ..	— ..	Feb. 19, 31.
8 ..	9 ..	Not known.*		Mar.	
10 ..	— ..	Dec. 20, 27.	10 ..	12 ..	Jan. 2, 29.
11 ..	— ..	Feb. 7, 31.	12 ..	— ..	Nov. 18, 29.

* But not recently. † No information available.

Note.—No patients have yet been discharged from hospital.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED MARCH 7TH, 1931.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 227; scarlet fever, 1500; diphtheria, 1046; enteric fever, 35; pneumonia, 2273 (last week 2706); puerperal fever, 40; puerperal pyrexia, 109; cerebro-spinal fever, 73 (same as last week); acute poliomyelitis, 2; encephalitis lethargica, 18; continued fever, 1; dysentery, 11; ophthalmia neonatorum, 100. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on March 10th–11th was as follows: Small-pox, 189 under treatment, 5 under observation (last week 188 and 1 respectively); scarlet fever, 1365; diphtheria, 1880; enteric fever, 238; measles, 117; whooping-cough, 392; puerperal fever, 27 (plus 10 babies); encephalitis lethargica, 122; poliomyelitis, 2; "other diseases," 167. At St. Margaret's Hospital there were 14 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox or enteric fever, 73 (0) from measles, 7 (2) scarlet fever, 48 (8) whooping-cough, 42 (7) diphtheria, 59 (14) diarrhœa and enteritis under two years, and 471 (65) from influenza. The figures in parentheses are those for London itself.

The only death from meningococcal meningitis occurred in London and that was under one year of age. Fifteen fatal cases of measles were reported from Liverpool, 9 from Newcastle-on-Tyne, 7 from Birmingham, 5 each from Nottingham and Birkenhead. Liverpool again reported 6 deaths from whooping-cough. Diphtheria claimed 5 victims at Liverpool, 4 at Birmingham, and 3 at Hull. The deaths from influenza were fewer than in the preceding two weeks; the 406 fatal cases outside London are scattered over 90 great towns: 44 were reported from Manchester, 22 from Birmingham, 14 from Nottingham, 13 each from Liverpool and Bradford, 12 each from Leeds and Hull, 11 from West Ham, and 10 from Stockport.

The number of stillbirths notified during the week was 289 (corresponding to a rate of 42 per 1000 births), including 49 in London.

NORTHERN HOSPITAL, MANCHESTER.—The seventy-fifth annual report of the Manchester Northern Hospital for Women and Children says that nearly 1500 in-patients were treated last year, and that 18,357 consultations were given in the out-patient department. The increase of in-patients was 181 and of out-patient attendances 958. The total ordinary expenditure increased by about £400, and the total ordinary income fell by £100. A new hospital for women and children is to be built on Alms Hill at a cost of over £90,000.

MEDICAL NEWS

University of Cambridge.

On March 13th, the following degrees were conferred:—
M.D.—J. H. Doggart.
M. Chir.—N. R. Barrett, and E. D. Moir.
M.B. & B.Chir.—M. E. Albury.
B. Chir.—J. G. Wigley.

Honorary degrees are to be conferred on Dr. J. S. Haldane, F.R.S., honorary professor and director of the mining research laboratory in the University of Birmingham, and Dr. A. M. Daniel, director of the National Gallery.

Royal College of Surgeons of England.

A meeting of the Council was held on March 12th with Lord Moynihan, the President, in the chair. Mr. Gwynne Williams, surgeon to University College Hospital, was re-elected a member of the Court of Examiners for a further period of five years.

The Fellowship of the College was conferred on Mr. Edward Grainger Muir, of Middlesex Hospital, who holds the Bernhard Baron research scholarship. Licences in dental surgery were granted to the following candidates, who were successful at the recent examination:—

W. O. Baird, E. B. Carpenter, G. E. Chadd, T. A. Chandler, S. E. Charman, G. H. Dakers, J. O. Gordon, C. C. Grant, E. L. Heath, Constance M. Henderson, William Hughes, C. A. Kirton, J. W. Mansie, E. H. Randerson, R. H. Robertson, W. K. Scantlebury, H. C. Skillington, Leslie Sparey, H. N. Toomey, Gordon Wallis, and A. E. Williamson.

Diplomas in ophthalmic medicine and surgery were granted, jointly with the Royal College of Physicians, to 18 candidates.

Royal Faculty of Physicians and Surgeons of Glasgow.

At a meeting on March 2nd, Dr. David McKay Hart and Dr. Margaret Taylor Tindal, both of Glasgow, were admitted, after examination, as Fellows of Faculty.

University of London.

At a meeting of the University Court on March 11th approval was given to the acceptance by the London School of Economics of an offer from the Commonwealth Fund of approximately £3600 a year for not less than three years for the provision of a course of training for psychiatric social workers. This grant will enable the school to extend somewhat the work which it has already been doing in coöperation with the Child Guidance Council during the past three years. About half of the grant will be available for scholarships for students taking the course.

Course on Mental Deficiency.

A course of lectures, for medical practitioners, on Mental Deficiency and other Mental Conditions closely allied to it, will be held under the auspices of the Central Association for Mental Welfare, from May 4th to 16th, at the University of London, Imperial Institute-road, South Kensington, S.W. It will be supplemented by a clinical instruction, and is divided into two parts which may be taken separately. Particulars may be had from Miss Evelyn Fox, c/o University Extension Dept., at the above address.

A Vickers Cot.

Since it was formed shortly after the outbreak of the late war, the Vickers' employees war relief fund, at Sheffield, has disbursed more than £51,000 in allowances to men who served in the Navy and Army, and their wives, children, and dependents. The fund has now been wound up and the balance of £500 has been used to endow a cot, which the Bishop of Sheffield dedicated last week, in the Cleaver ward of the Sheffield Children's Hospital.

Fellowship of Medicine and Post-Graduate Medical Association.

Several special courses will be held after Easter. From April 13th to 18th there will be an all-day course in gastro-enterology at the Prince of Wales's Hospital in association with the North Middlesex Hospital; from April 13th to May 9th an afternoon course in Venereal Diseases at the London Lock Hospital; from April 20th to 25th an all-day course in Diseases of Chest at the Brompton Hospital; from April 27th to May 9th a morning course at the Hospital for Sick Children, and an afternoon course at the Infants' Hospital; from April 21st to May 30th, an afternoon course in Psychological Medicine at the Maudsley Hospital, and from April 27th to May 23rd an intensive course in the Central London Throat, Nose, and Ear Hospital. Full particulars of these and other courses may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

London School of Hygiene and Tropical Medicine.

At this school on March 13th Sir Gowland Hopkins, President of the Royal Society, unveiled a plaque in memory of the late Lord Wandsworth, who left £10,000 to found a scholarship for medical research.

Hospital Service of London.

On Thursday, March 26th, at 8.30 P.M., Mr. H. S. Wellcome, LL.D., is giving a reception at the Wellcome Historical Medical Museum, Wigmore-street, London, W. Lord Macmillan and Sir George Hume will speak on The Hospital Service of London.

Order of St. John of Jerusalem.

From June 22nd to 27th this Order will celebrate the centenary of its revival in Great Britain. An appeal is being made for £100,000 to provide suitable headquarters and endowment.

Naval Medical Compassionate Fund.

A meeting of subscribers to this Fund will be held at 3 P.M. on April 16th at the Medical Department of the Navy, Queen Anne's Chambers, Tothill-street, Westminster, S.W. 1, to elect six directors.

Medical Tour in Germany.

A tour of German spas and countryside has been arranged for June 1st to 12th exclusively for members of the medical profession. Among the places visited will be Aix-la-Chapelle, Nauheim, and Neuenahr, and there will be a motor trip through the Eifel and the Rhine country. Particulars may be had from the organiser, Mr. Robert Rohme, 90, Sheaveshill-avenue, Colindale, London, N.W. 9.

Nottingham Cripples' Guild.

Last year there was an enormous growth in the work at the clinics, attendances increasing by nearly 6000 over 1929.

Royal Medical Benevolent Fund.

The annual meeting of this Fund will be held at 11, Chandos-street, Cavendish-square, London, W., on March 17th, at 5 P.M.

The following is an additional case relieved at the last meeting:—

Widow, aged 63, of M.B. The husband died in 1895 at the age of 28 when he was a medical missionary. Since the death of her husband the applicant by her own industry and efforts as a hospital nurse in England and Australia, as a matron in a school in Canada, and finally as a secretary to a society in England has maintained herself. Ill-health has now forced her to resign and to give up all active work; she has an income of only £60. The Fund voted £26.

Cheques should be forwarded to the hon. treasurer of the Fund, 11, Chandos-street, Cavendish-square, London, W1.

Motorists' Hospital Circles.

Last year the number of motor accident patients treated at Burnley Victoria Hospital increased so considerably that a "motorists' circle" was started to raise money to meet the cost of dealing with such cases. Motorists were asked to become members by subscribing 2*s.* 6*d.* per annum; in return they receive a disc to be affixed to the car. So far the response has been unsatisfactory. A similar scheme has now been adopted by Salford Royal Hospital, which is in one of the busiest thoroughfares in Lancashire. Injured motorists keep an average of eight beds in continuous occupation at a cost of over £1100 a year, of which only £124 was repaid in 1930. Here, also, the response has been relatively small.

Manchester Hospitals.

It had been hoped that means would be available for rebuilding the Manchester Northern Hospital for Women and Children as a general hospital on a scale of 200 beds and cots at a cost of £150,000. The amount subscribed, however, only slightly exceeds £89,000, and it has therefore been decided to erect a smaller building on a site in Cheetham Hill-road given by the late Sir Edwin Holt, a former President. The projected new building will cost over £90,000, and there will be room for expansion. The existing hospital is officially stated to be "altogether out of date," and the accommodation is strained almost to breaking point.—Severe pressure is also being experienced by the Manchester and Salford Hospital for Skin Diseases, and the annual report states that it is only with great difficulty that patients can be treated efficiently. Last year 11,521 patients were treated; the congested out-patients' department remains as it was a quarter of a century ago, but annual subscriptions have fallen off and money for enlargements is not available.

Mental After-Care Association.

The annual meeting of this association will be held at 3 P.M. on March 25th at the Haberdashers' Hall, Gresham-street, London, E.C. Lord Wakefield will preside, and among the speakers will be Sir Hubert Bond, Dr. Walter Carr, Dr. T. Saxty Good, and Dr. Nathan Raw. The secretary's address is Church House, Westminster, S.W.1.

King's College Hospital.

The accounts for 1930 show that the income was £9000 less than in 1929, that the expenditure exceeded the income by more than £13,000, and that the total debt is £65,400. At the annual court of governors Lord Gorell, the chairman, stated that the hospital was kept going by the large sums paid by patients. An effort is to be made this year to raise £27,500 to complete the nurses' home.

Medical Diary

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, March 23rd.—8 P.M., ODONTOLOGY. Demonstration: Dr. David Imrie: Radiographs for Prosthetic and Orthodontic Work. Cases: Dr. E. W. Fish: Multiple Dental Cyst. Mr. Percival P. Cole: Cancer of the Mouth Treated by Radium with Inter-oral Apparatus. Other cases will be shown.

TUESDAY.—5 P.M., MEDICINE. Discussion: The Value of Liver in Treatment. Openers: Dr. Janet Vaughan, Dr. S. C. Dyke, and Dr. J. F. Wilkinson. Other speakers will take part.

WEDNESDAY.—2.30 P.M., UROLOGY. At St. Paul's Hospital, 24, Endell-street, London, W.C.2. Prof. A. von Lichtenberg will demonstrate an operation on the kidney. Owing to the limited accommodation, admission to the operating theatre will be by card to be obtained from Mr. H. P. Winsbury-White, F.R.C.S., at 51, Harley-street, W. 5 P.M., COMPARATIVE MEDICINE, EPIDEMIOLOGY AND STATE MEDICINE. Discussion: Milk-borne Streptococcus Epidemics. Openers: Dr. W. G. Savage, Dr. F. C. Minett, and Mr. A. W. Stableforth. Followed by Dr. E. Wilkinson, Mr. J. W. Brittlebank, and others.

THURSDAY.—5.30 P.M., UROLOGY. Paper: Prof. A. von Lichtenberg (Berlin): The Principles and New Advances in Excretion Urography.

FRIDAY.—5 P.M., DISEASE IN CHILDREN (Cases at 4.30 P.M.). 8 P.M., EPIDEMIOLOGY AND STATE MEDICINE. Paper: Mr. A. F. MacCallan: Trachoma: Its Importance as a World-wide Disease.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, March 23rd.—8.30 P.M., Discussion on Growth in Children, Clinical, Radiological, and Histological, to be introduced by Dr. H. A. Harris, followed by Dr. H. H. Mills.

MEDICO-LEGAL SOCIETY.

THURSDAY, March 26th.—8.30 P.M. (at 11, Chandos-street, Cavendish-square, W.), Mr. F. L. Collins: Mortality Tables: Their History, Construction and Use, to be followed by a discussion.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos-street, Cavendish-square, W.

FRIDAY, March 27th.—8.30 P.M., Demonstration of Various Flocculation Tests for Syphilis will be given by Dr. T. E. Osmond and Dr. L. W. Cann. Introductory remarks by Col. L. W. Harrison. A discussion will follow.

TUBERCULOSIS ASSOCIATION.

THURSDAY, March 26th to SATURDAY.—(At Dunn Laboratory, Oxford). Annual meeting, addresses, and discussions.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY.

WEDNESDAY, March 25th.—4.15 P.M. (at St. John's Hospital, 49, Leicester-square, W.C.), Clinical Cases. Dr. Dore will read a paper entitled Infectivity and Auto-dissemination of Certain Skin Diseases.

EUGENICS SOCIETY.

TUESDAY, March 24th.—5.30 P.M. (at the Rooms of the Linnean Society, Burlington House, W.), Mr. W. Palin Elderton: Heredity and Insurance.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.

MONDAY, March 23rd.—5 P.M., Mr. Reginald T. Payne: Pathological Specimens Relating to Diseases of the Gall-bladder and Extra-heptic Biliary Passages.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.

TUESDAY, March 24th.—5 P.M., Sir William Willcox: Toxic Jaundice (Second Lumleian Lecture).

THURSDAY.—5 P.M., Sir William Willcox (Last Lumleian Lecture).

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, March 23rd, to SATURDAY, March 28th.—KING'S COLLEGE HOSPITAL, Denmark-hill, S.E. Wed., Free demonstration by Mr. V. E. Negus: Nose and Throat Cases. At 3 P.M.—ST. JOHN'S HOSPITAL, Morden-hill, Lewisham, S.E. Thur., Free demonstration by Dr. John Gibbens: Pulmonary Tuberculosis in Childhood with Cases. At 2.30 P.M.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Special Course in Dermatology. Every afternoon and evening.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Special Course in Medicine, Surgery, and Gynæcology occupying mornings and afternoons.—WEST END HOSPITAL FOR NERVOUS DISEASES, Welbeck-street, W. Lectures illustrated by cases at 5 P.M daily.—Further particulars from the Fellowship of Medicine.

ROYAL INSTITUTION, 21, Albemarle-street, W.

TUESDAY, March 24th.—5.15 P.M., Mr. C. D. Darlington: Cytological Theory of Heredity.

THURSDAY.—5.15 P.M., Prof. J. B. S. Haldane: Respiration.

FRIDAY.—9 P.M., Lord Rutherford: Helium and its Properties.

SATURDAY.—3 P.M., Lord Rutherford: Alpha-Rays.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, March 23rd.—2.30 to 5 P.M.: Medical, Surgical, and Gynæcological Clinics. Operations.

TUESDAY.—2.30 to 5 P.M.: Medical, Surgical, Ear, Nose, and Throat Clinics. Operations.

WEDNESDAY.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, Throat, and Ear, and Children's Diseases Clinics. Operations.

FRIDAY.—10.30 A.M.: Ear, Nose, and Throat Clinics. 2.30 to 5 P.M.: Medical and Surgical Clinics. Operations.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith-road, W.

MONDAY, March 23rd.—10 A.M., Gynæcological Ward, Genito-Urinary Operations. Skin Department. 11 A.M., Surgical Ward Visit. 2 P.M., Surgical Ward Visits. Operations. Medical, Surgical, Eye, and Gynæcological Out-patients.

TUESDAY.—9.30 A.M., Operations. 10 A.M., Medical Ward Visit, Dental Department. 11 A.M., Throat Operations. 11.30 A.M., Surgical Demonstration. 2 P.M., Operations. Medical, Surgical, and Throat Out-patients.

WEDNESDAY.—10 A.M., Medical Ward Visit, Children's Medical Out-patients. 2 P.M., Operations, Medical, Surgical, and Eye Out-patients. 4.45 P.M., Venereal Diseases Demonstrated.

THURSDAY.—10 A.M., Neurological Department. 11.30 A.M., Fracture Demonstration. 2 P.M., Medical, Surgical, Genito-Urinary, and Eye Out-patients. 2.30 P.M., Operations.

FRIDAY.—10 A.M., Medical Ward Visit, Dental Department, Skin Department. 12 noon, Medical Lecture. 2 P.M., Operations, Medical, Surgical, and Throat Out-patients.

SATURDAY.—9 A.M., Throat Operations. 10 A.M., Medical Ward Visit, Children's Medical Out-patients. Surgical Out-patients.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, March 23rd.—12 noon, Dr. Greenfield: Pathology of Cerebral Tumours. 2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Mr. Leslie Paton: Vestibular Control of Ocular Movements.

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Grainger Stewart: Visual Disturbances in Nervous Diseases.

WEDNESDAY.—2 P.M., Dr. Martin: Out-patient Clinic.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Cerebral Tumours.

FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Carmichael: Nervous Symptoms Associated with Blood Diseases.

CHARING CROSS HOSPITAL MEDICAL SCHOOL, Agar-street, W.C.

SUNDAY, March 22nd.—10.30 A.M., Mr. Norman C. Lake. Surgical Questions and Answers. 11.45 A.M., Dr. A. F. Rosher: Laboratory Tests as an Aid to the Diagnosis of Pyrexia of Unknown Origin.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL, University-street, W.C.

TUESDAY, March 24th.—5.15 P.M., Dr. C. H. Andrewes: Immunity in Virus Diseases.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.

WEDNESDAY, March 25th.—4 P.M., Mr. Sidney Boyd: Clinical Demonstration.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, March 24th.—5 P.M., Dr. H. MacCormac: Malignant Growths of the Skin.

THURSDAY.—5 P.M., Dr. W. N. Goldsmith: Benign Growths of the Skin.

CITY OF LONDON MATERNITY HOSPITAL, City-road, E.C.

THURSDAY, March 26th.—5 P.M., Mr. R. C. Brown: The Significance of Albuminuria.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, March 27th.—4 P.M., Mr. Archer Ryland: Œsophagoscopy.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida-Vale, W.

THURSDAY, March 26th.—3 P.M., Dr. Anthony Feiling: Clinical Demonstration.

CHADWICK PUBLIC LECTURES.
THURSDAY, March 26th.—5.15 P.M. (in the large Hall of the British Medical Association, Tavistock-square, W.C.), Prof. Major Greenwood: "Nerves" and the Public Health.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, March 24th.—4.15 P.M., Dr. D. Dougal: Endometrioma.
FRIDAY.—4.15 P.M., Dr. C. H. Melland: Demonstration of Medical Cases.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, Elizabeth-street.
WEDNESDAY, March 25th.—4.30 P.M., Dr. S. Kelly: Headaches.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINIC.
FRIDAY, March 27th.—3.30 P.M., Mr. H. B. Yates: Surgical Treatment of Vascular Disease (including Injection of Varicose Veins).

ANCOATS HOSPITAL, Manchester.
THURSDAY, March 26th.—11 A.M., Dr. N. Kletz: Clinical Demonstration. 4.15 P.M., Mr. H. Platt: Treatment of Fractures of the Upper Limb.

Appointments

GREGORY, J. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Surgical Unit, University College Hospital.
SAYLE, T. O., M.B., B.S. Melb., Resident Medical Officer, Freemasons Hospital and Nursing Home, Fulham-road, S.W.
STIVEN, H. E. S., M.D., B.Chir. Camb., P.M.O. to the new Demerdache Hospital, Cairo.
Certifying Surgeons under the Factory and Workshop Acts: GRIFFITHS, T. A., M.B., Ch.B. Liverp. (Towyn, Merioneth); ORR-EWING, A., M.B., Ch.B. Camb. (Rowfant, Sussex).

Vacancies

For further information refer to the advertisement columns.

Ashton-under-Lyne, District Infirmary.—H.S. At rate of £150.
Bacup, Borough of.—Part-time M.O.H., &c. £400.
Blackburn County Borough.—Asst. Dentist. £450.
Bristol City and County Mental Hospital.—Third and Fourth Asst. M.O.'s. £450 and £350 respectively.
Cambridge, Addenbrooke's Hospital.—H.P. At rate of £130.
Cardiff City Lodge Institution.—Second and Third Asst. M.O.'s. £490 and £150 respectively.
Carlisle, Cumberland Infirmary.—H.S. to Ear, Eye, Nose, and Throat Dept. At rate of £155.
Charing Cross Hospital, W.C.—Med. Reg. £150.
Chester Royal Infirmary.—H.S. and H.P. Each £150.
City of London Hospital for Diseases of the Heart and Lung, Victoria Park, E.—H.P. At rate of £100.
Derby, County Mental Hospital, Mickleover.—Med. Supt. £1200.
Doncaster Royal Infirmary.—H.S. At rate of £175.
Durham, Earl's House Sanatorium.—M.O. £450.
East Ham Memorial Hospital, E.—Hon. Ophthal. Surg.
Essex Administrative County.—Jun. Asst. County M.O.H. £500.
Evelina Hospital for Children, Southwark, S.E.—Hon. Dental Surgeon. Also H.S. At rate of £120.
Gloucester, Gloucestershire Royal Infirmary, &c.—First H.S. At rate of £150.
Grocers' Company, Grocers' Hall, E.C.—Research Scholarships. Each £300.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hastings, Royal East Sussex Hospital.—Temp. Res. Sen. H.S. At rate of £150.
Hospital for Sick Children, Great Ormond-street, W.C.—H.S. and H.P. Each at rate of £100.
Hull Royal Infirmary.—H.S. to Opth. and Ear, Nose and Throat Depts. At rate of £150.
Ipswich, East Suffolk and Ipswich Hospital.—H.S. £120.
Lancaster, County Mental Hospital.—Asst. M.O. £500.
Leicester Royal Infirmary.—H.P. £125. Also Two Surgical Dressers. Each 10s. 6d. per week.
Leicestershire and Rutland Mental Hospital, Narborough.—Asst. M.O. £350.
Liverpool and District Hospital for Diseases of the Heart.—Research Fellow. £200.
Liverpool, Mill-road Infirmary.—Res. Asst. M.O.'s. Each £200.
Liverpool Open Air Hospital for Children, Leasowe.—Jun. Res. M.O. £200.
Liverpool, Royal Southern Hospital.—Orthopædic H.S. Also M.O. to Special Depts. Each at rate of £60.
L.C.C.—Pathologist for Lambeth Group Laboratory, Lambeth Hospital, Brook-street, Kennington, S.E. Also Histologist for Council's Laboratory Service. £1100–£1300 and £1000–£1200 respectively.
London Light and Electrical Clinic, 42, Ranelagh-road, S.W.—Three Hon. Visiting Physicians.
Manchester Royal Eye Hospital.—Jun. H.S. £120.
Manchester Royal Infirmary, Central Branch, Roby-street.—H.S. At rate of £100–£200.
Manchester Royal Infirmary.—Hon. Dermatologist. Also Dickinson Research Travelling Scholarship in Medicine. £300, and Dickinson Research Surgery Scholarships. £75.
Manchester University.—Pilkington Fellowship in Cancer Research. £300. Amy Henrietta Worswick Fellowship. £150. Also Knight Fellowship. £150.
Newark General Hospital.—Res. H.S. £175.
Nottingham General Hospital.—Cas. O. Also H.P. At rate of £200 and £150 respectively.
Nuneaton General Hospital.—H.S. At rate of £120.
Oldham Royal Infirmary.—H.S.'s to Special Depts. Each at rate of £175.
Paddington Green Children's Hospital, W.—H.P. Also H.S. Each at rate of £150.
Portsmouth Education Committee.—Asst. School M.O. £500.
Portsmouth Royal Hospital.—3rd H.S. Also Cas. O. At rate of £130 and £100 respectively.
Prince of Wales's General Hospital, Tottenham, N.—Res. Sen. and Jun. H.P. and Special H.S. Each at rate of £120. Also Res. Jun. H.P. and Two Jun. H.S.'s. Each at rate of £90.
Radium Institute, Riding House-street, W.—Res. Surg. Reg. At rate of £250.
Reading, Royal Berkshire Hospital.—Cas. O. and Res. Anæsthetist. Each at rate of £150.
Rotherham Hospital.—Cas. H.S. £120. Hon. Surgeon to Ear, Nose and Throat Dept. Also Hon. Dental Surgeon to Out-patients' Depts.
R.A.F. Medical Service.—Commissions.
Royal Eye Hospital, St. George's-circus, S.E.—Hon. Asst. Surgeon. Also Clinical Assts.
Royal Free Hospital, Gray's Inn-road, W.C.—Res. Cas. O. £150.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Cas. O. for Out-patient Dept. £150.
St. Helens Hospital, Lancs.—H.S. £200.
St. John's Hospital, Lewisham, S.E.—Hon. Surg.
St. John's Hospital for Diseases of the Skin, 49, Leicester-square, W.C.—Hon. Jun. Med. Reg.
St. Mark's Hospital for Cancer, &c., City-road, E.C.—H.S. At rate of £75.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—H.S. At rate of £75.
Scunthorpe and District War Memorial Hospital.—Second Res. H.P. £150.
Shrewsbury, Royal Salop Infirmary.—Res. H.S. and Res. H.P. Each at rate of £160.
South Africa.—Asst. Radiologist. £145.
Stafford, Staffordshire General Infirmary.—H.P. £150.
Surrey County Sanatorium, Milford.—Third Asst. Res. M.O. £350.
Sutton, Surrey, New Sutton and Cheam Hospital.—Hon. Pathologist and Bacteriologist.
Swansea Hospital.—H.S. £150.
Taunton, Taunton and Somerset Hospital.—H.P. £100.
Tunbridge Wells and Counties General Hospital.—H.S. £160.
Wallasey Victoria Central Hospital.—Jun. H.S. At rate of £100.
Walsall General Hospital.—H.S. At rate of £150.
West Bromwich and District General Hospital.—H.S. At rate of £200.
Westminster Hospital, Broad Sanctuary, S.W.—H.S. to Ear, Nose, and Throat Dept. At rate of £102.
Weymouth and Melcombe Regis Borough.—M.O.H. and School M.O. £800.
Windsor, King Edward VII. Hospital.—H.S. At rate of £100.
The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Stornoway (Ross and Cromarty), Farnborough (Hants); Winchester (Hants); and Withernsea (Yorks).
The Home Secretary is considering the question of appointing an additional Medical Referee under the Workmen's Compensation Act for the Dumbarton district of the Sheriffdom of Stirling. Applications should reach the Private Secretary, Scottish Office, Whitehall, London, S.W. 1, not later than April 8th.

Births, Marriages, and Deaths

BIRTHS.

ABEL.—On March 14th, at Clifton-hill, N.W., to Margaret Russell (nee Paterson), M.D. Lond., the wife of A. Lawrence Abel, M.S., F.R.C.S., of Harley-street, W., of a daughter.
BRADSHAW.—On March 9th, at Crouched Friars, Colchester, the wife of Dr. Bradshaw, of a daughter.
COSSHAM.—On March 14th, at Kingsleigh, Cirencester, the wife of Dr. D. G. Cossham, of a son.
MATTHEW.—On March 12th, at a nursing home, the wife of Dr. David Matthew, of Holland-park, W., of a son.
REYNOLDS.—On March 12th, at Fifield, Broseley, Salop, the wife of Dr. John B. A. Reynolds, of a son.

DEATHS.

CARLYON.—On March 13th, at Middlesex Hospital, following a severe operation, Lieut.-Col. Arthur Farrington Carlyon, R.A.M.C. (retired).
COOPER.—On March 9th, at Harrogate, Arthur Cooper, M.R.C.S., L.R.C.P. Lond., of York, in his 84th year.
DOBIE.—On March 9th, at Beechroyd, Keighley, Yorkshire, Dr. Hugh Somerville Dobie, aged 61.
DURRANT.—On March 8th, at Basseterre, St. Kitts, B.W.I., suddenly, following a heart attack, Hon. Cyril Heartly Durrant, M.B., Ch.B., Chief Medical Officer of St. Kitts-Nevis.
FINDLATER.—At Edgware, on March 16th, Alexander Findlater, D.S.O., M.D., J.P., aged 70 years.
GOSTLING.—On March 12th, at Barningham, Crescent-road, Worthing, William Ayton Gostling, M.D., B.S., B.Sc. Lond., in his 76th year.
HOPEWELL-SMITH.—On March 14th, at Wickham Way, Beckenham, Arthur Hopewell-Smith, M.R.C.S., L.R.C.P., L.D.S., aged 65.
THOMAS.—On March 12th, at Moorcroft-road, Streatham (formerly of Caterham), Edward George Thomas, O.B.E., M.D. Edin.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

NURSING, MIDWIFERY, AND PUBLIC HEALTH CONFERENCE.

THE TRIALS OF A MATRON.

SPEAKING on March 2nd at the New Horticultural Hall on the trials of a matron, Miss Edith King, the matron of Cardiff City Mental Hospital, said that in this pleasure-loving age nurses did not realise that they must give up their time and enjoyment to the sick; they lived for their off-duty hours. In her view a nurse should always be ready to give up part of her free time when occasion arose. Discipline was necessary in a hospital, but in reprimanding wilfulness or thoughtlessness the matron should try to avoid sarcasm. One of the chief difficulties of a matron lay in finding suitable candidates for nursing, for though there were usually many applicants those selected were often disappointing. Preparation for examinations meant frequent classes for the nurses, so that the sisters were left short-handed in the wards. The papers set by the examiners were often more suitable for medical students than nurses. From country hospitals the nurses had to go many miles to sit for the examination, rising at a very early hour to catch the train and arriving too tired to do their best; often no arrangements had been made for their meals when they had written the papers. The result was that many of the best nurses failed, when their matron had counted upon them for promotion to the rank of staff nurse.

Col. R. J. Blackham (the chairman) sympathised with Miss King's description of the examinations set for nurses; many medical students would find difficulty in answering the questions. He thought that matrons should protest.

In replying, Miss King made it clear that she did not advocate any lowering of the standard for State registration. She only considered that certain unreasonably difficult questions should be withdrawn.

THE TRIALS OF A PROBATIONER.

Miss E. Fisher, matron of the New End Hospital, Hampstead, spoke of the trials of a probationer. On admission to hospital the probationer was apt to experience a lack of encouragement from those about her; she sometimes felt overtired, and chafed at the discipline and at hospital etiquette, at the rules against smoking, the records kept of her going out and her coming in, the fixed hour for turning out her lights, and the demand that an address should be left when she went away for the night. Most of these trials were unimportant if taken in the right spirit. Etiquette was intended to facilitate the hospital routine; if a nurse were late on duty or at meals other nurses would suffer. Smoking was usually forbidden in bedrooms because of the danger of fire; addresses were left so that the nurse could be summoned if an urgent call came for her from her home. The apparent indifference of sisters and superiors was frequently due to shyness and reserve. It was inaccurate to talk of a nurse being on duty from 7 A.M. to 8 P.M., for there were many breaks and no long stretch of work. Women in other professions had quite as much reason for grumbling as nurses. To matrons she would say, "We tell nurses that they have far greater advantages than we had—but have they?" Nurses nowadays had more lectures and less practical work. They frequently had to miss seeing an interesting piece of special treatment in order to go to a class to practise on a dummy. There should be a definite time for nursing lectures before the probationers entered the wards. Miss Fisher said that she could understand that the dual strain of lectures and nursing must prove a trial. To probationers she would say, "Stop grumbling. Give as well as take." If nursing were entered in a spirit of willing service trials would take a back place.

In thanking Miss King and Miss Fisher, Miss Oliver said that she hoped a future session might include an address from a probationer in person on what she considered her trials to be.

NURSING ORGANISATION.

On March 3rd, with Dr. Elizabeth Sloan Chesser in the chair, Dr. D. C. McLeod Munro spoke on the educational advancement of the nursing profession. He sketched the history of nursing from the mythical daughter of Æsculapius to the State-registered nurse of the present day. The problem of nursing education, he said, was in need of solution; it was at present governed by a spirit of false economy. The standard of education for entrants to the nursing profession had been lowered in response to the increased demand for nurses, and educated girls were taking up other occupations. Objections to the nursing profession included long hours, short holidays, excessive house work, unnecessary restrictions, and the absence, in many hospitals, of suitable accommodation for the nursing staff. Some of these objections had been met in the larger hospitals, but in many others they still persisted. The probationer should be treated and regarded as a student. A hospital had to carry on with routine work in the care of sick persons, and the education of nurses was too often a subsidiary consideration. It must be remembered that the hospital was saved expense by the utilisation of student labour. Owing to the shortage of applicants many candidates had to be admitted who were not really suitable. What were the essential needs of a nurse's training? In the first place a definite standard of education should be required; the candidate shou'd hold either the school-leaving certificate or have passed the London matriculation, while a course which should include hygiene, cookery, and elementary materia medica might be introduced into the syllabus of these examinations for those intending to become nurses. Once in hospital no student nurse who was tired out should be required to attend lectures; some system should be introduced by which this could be avoided. For the graduate nurse educational courses should be arranged in special branches of her work. There were many openings nowadays for nurses in public health, school, and mental work, as well as posts abroad. Why were there so few applicants? Financially the rewards of a nurse's training were not excessive, and high ideals of service were necessary; the average girl might be pardoned if she chose other occupations. A teaching staff and adequate equipment were required in all training schools, and these should be provided either by private or State endowment.

In the discussion which followed, one speaker opposed the idea of the eight-hour day as being detrimental to the well-being of patients. A nurse from New Zealand stated that the eight-hour day had been in force there for many years with success, and that no one wished for a return to longer hours of duty.

AMALGAMATED TRAINING.

Miss E. Edmondson, matron of the Aberdeen Royal Infirmary, speaking on the organisation of a nursing staff from the matron's point of view, said that when the examination for State registration was introduced the matrons should have appealed to the schools to introduce anatomy, physiology, and hygiene into the curriculum for girls who wished to take up nursing. At the present time many failures in nursing examinations were due to cramming and overwork. The pay of the probationer, in her opinion, should not be raised, and should not be regarded as a salary, but only a small fee to help her on her way. The prospects for the graduate nurse, however, required improvement. Domestic work should be completely abolished from among the duties of a nurse. She would like the girl of 17 who had decided to be a

nurse to do one year's work on anatomy and physiology, and one year in a domestic economy school. Finally, Miss Edmondson said, she wished to put the case for amalgamated training; by means of a wider system of affiliations it should be possible for a nurse to take a complete training, not only in medicine, surgery, gynæcology, and sick children's nursing, but in mental and fever nursing, in skins, venereal diseases, eyes, ear, nose, and throat, and in midwifery. Properly arranged such a course could be taken in five years instead of nine, which, as the curriculum stood at present, was the period required to cover nursing training in all its branches. More graduate nurses should be employed in hospitals so that student nurses could profit to the full by their training. Nurses about to take their final examination should be freed from other duties and allowed to work in any departments they wished for the last few weeks. Practical work was more valuable than any lectures, and at the present time the nurse was asked to assimilate far too much theory. She did not think the eight-hour shift advisable; in few hospitals was the working week now allowed to exceed 52 hours.

A HOSPITAL PHARMACOPŒIA.

THE new edition of the Pharmacopœia of St. Thomas's Hospital is a veritable *multum in parvo* of pharmacy. Fully three-quarters of the book are occupied by notes and memoranda on the 1914 British Pharmacopœia, offering a most succinct compendium of the essential and practical features of official materia medica. The conscientious perusal of these notes will lighten the burden and enlighten the understanding of every St. Thomas's student and resident. A résumé of poisons and antidotes, a synopsis of the Dangerous Drugs Regulations, and some eminently practical conversion tables are to be found at the end of the book. The hospital pharmacopœia proper covers 47 pages, interspersed with ruled leaves convenient for notes. Urgency alone has led to the issue of a fresh edition so near the dawn of a new B.P., which may render it obsolete. Opinions differ on the propriety of issuing pharmacopœias of this kind reflecting local tastes and prejudices. In the past they have crystallised a remarkable body of bed-side experience. The prime usefulness of this little book now lies in the fact that it provides, under imposing titles in impeccable Latin, a wide field of elegant and practical recipes and prescriptions, ranging from baths, poultices, and mixtures to the specialities of the eye and skin departments of a general hospital. These will form models in prescribing for the young practitioner. In one or two points improvement is possible. Greater attention might be paid to group headings: one passes, for instance, without warning, from guttæ pro aur. to black draught and a vaginal injection (pp. 9–10), and under solutions for local anæsthesia one finds a chemical food and syrup (p. 31). A number of mixtures are obviously redundant, and the list of endocrine tablets needs adapting to pharmacopœial authority. We question the wisdom of dispensing adrenalin in a stock solution with novocain (p. 31), especially before sterilisation; moreover, 2 per cent. iodine in methylated spirit (p. 26) is economical, but can be very irritating to the operator's eyes. We have only found one misprint in the whole book, which is a monument to the compiler's diligence. It is well bound and convenient for the pocket.

PEPTIC ULCER AND CAYENNE PEPPER.

ULCERS of the upper part of the digestive tract are generally regarded as rare among black people, but Dr. Stuart Bergsma, of Addis Ababa,[1] states that gastric and duodenal ulcers are relatively common in Abyssinia, although acute appendicitis is rare. Until about six years ago there was not a single surgical hospital in the country, and only during the last four years has any considerable amount of operating been done. During that time, however, Dr. Bergsma has been much impressed with the high proportion of patients whose complaint is stomach trouble of several years' duration. The treatment is of necessity surgical, for as soon as the patient leaves hospital he ceases to take his medicine and returns to the native diet of sour bread, raw meat, and peppery sauce. All patients except one were men, but this may be due to the difficulty of obtaining the consent of husbands for the admission of the women to hospital for operation.

Although Addis Ababa has 5000 white inhabitants there has not been a single case of ulcer among them, but acute appendicitis is not rare. There is, therefore, some reason for thinking that the high preponderance of ulcers among the natives is related to their habit of life. Dr. Bergsma dismisses their heavy infection with the beef tapeworm and helminth parasites, for these affect chiefly the lower part of the bowel, and also the high incidence of syphilis, for this applies also to the negroes of America. He turns therefore to the diet. The sour bread is made in the form of an immense thin pancake, part of which is broken off, rolled into a cornucopia and dipped into a sauce that is approximately half cayenne pepper. This is washed down, almost without mastication, with copious draughts of honey water. The babies are weaned at the age of about 2 years, and from that age the diet consists monotonously of these constituents, with occasional beans, peas, and meat. Hence, Dr. Bergsma leans to the corrosive theory of the pathogenesis of gastric ulcer. It would be interesting to hear the experience of surgeons in other parts of the world where a highly irritating diet is taken.

[1] Arch. Int. Med., January, 1931, p. 144.

GRIFFIN'S YEAR BOOK.

We are glad that the Year Book of Scientific and Learned Societies, which has been issued for nearly half a century by Messrs. Charles Griffin and Co., Ltd., is not to be discontinued. The appeal for more general support made in our own columns and in the scientific press generally has had its effect, and the forty-seventh issue now before us maintains its familiar size and form. Suggestions have, however, been made that the year book might find greater support in an abridged and less expensive form, its present price being 18 shillings. The publisher therefore proposes to eliminate from future issues the alphabetical lists of papers read at the societies during the current year, but to retain all other information that has been given hitherto. We may remind our readers that the year book contains a record of the objects of scientific and learned societies in Great Britain and Ireland, along with the conditions of membership, the times of holding meetings, and the names of the principal officers. The year book is classified under 14 headings beginning with general science and ending with medicine, to which at present about 45 pages are allotted. The information is well arranged and not available in this form elsewhere. The volume is therefore a useful one for reference, and should be on the shelves of every public library.

YORK WORKPEOPLE'S HOSPITAL FUND.—Last year was the thirtieth since the foundation of this fund, and at the end of 1929 the total raised from the beginning was £92,402. It was determined to endeavour to raise the total to £100,000 by the end of 1930. The effort succeeded so well that the sum raised exceeded the mark by £369.

BRISTOL GENERAL HOSPITAL.—Miss Hilda Wills last week opened a new out-patient department, which has cost £35,000, at Bristol General Hospital. The accommodation includes a waiting hall with seats for 400 people, and a canteen. Last year the hospital dealt with 157,952 out-patients, an increase of 7000 over 1929. The ordinary expenditure exceeded the ordinary income by £10,840, but by crediting the sums received from free legacies the deficit was reduced to £9629. The hospital's debt now amounts to £21,000, which it is hoped to clear off before it celebrates its centenary next year.